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PLM315

Maintenance Processing: Operational Functions

mySAP ERP Operations: Support

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Participant Handbook

Course Version: 2005 Q2
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Typographic Conventions

American English is the standard used in this handbook. The following typographic conventions are also used.

Type Style	Description
Example text	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths, and options. Also used for cross-references to other documentation both internal (in this documentation) and external (in other locations, such as SAPNet).
Example text	Emphasized words or phrases in body text, titles of graphics, and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example SELECT and INCLUDE.
`Example text`	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, and passages of the source text of a program.
`Example text`	Exact user entry. These are words and characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.

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The following icons are used in this handbook.

Icon	Meaning
	For more information, tips, or background
	Note or further explanation of previous point
	Exception or caution
	Procedures
	Indicates that the item is displayed in the instructor's presentation.

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Course Overview

The intensive course PLM315 (Maintenance Processing: Operational Functions) consolidates the points presented in PLM300 (Maintenance) regarding Maintenance Processing.

Further functions are presented on the themes of notification, planning, controlling and completion of maintenance processing.

The relevant settings in Customizing are introduced regarding these themes.

The course is rounded off with a chapter on Accessing Maintenance Functions using the SAP Portal.

Target Audience

This course is intended for the following audiences:

- Project leader
- Project team

Course Prerequisites

Required Knowledge

- PLM300 Maintenance

Recommended Knowledge

- SAP01
- SAPPLM

Course Goals

This course will prepare you to:

- Make all the basic Customizing settings for maintenance processing.
- Use special application functions, such as permits, workflows and time sheets (CATS).

Course Objectives

After completing this course, you will be able to:

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- Set up and use Internet or Intranet supported access to maintenance functions (portal)
- Set up and use notification (notification type, catalog, catalog profiles)
- Set up and use planning (order type, work center, capacity planning)
- Set up and use controlling (material availability check, scheduling, permits, workflows, printing)
- Set up and use completion (completion confirmation, history, CATS)

SAP Software Component Information

The information in this course pertains to the following SAP Software Components and releases:

- ECC 5.0

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Unit 1

User Interface

Unit Overview

This chapter links previous chapters on *Navigation*, *Organization* of *Maintenance* and *Planning Maintenance* from course PLM300. It also reviews terms and user interface concepts. In addition to the standard uses of SAPGUI, access through a portal or mobile solutions will be shown.

Unit Objectives

After completing this unit, you will be able to:

- Distinguish the SAP standard menu from the role-specific menus
- Describe the role concept
- Describe the user assignment to roles
- Explain the concept of mySAP Enterprise Portal
- Explain the concept of the Business Package for Assets
- List key technical aspects of SAP Enterprise Portal's software components
- Describe online scenarios
- Describe offline scenarios
- List the basic functions of Mobile Asset Management

Unit Contents

Lesson: SAP GUI 2
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Lesson: Mobile Solutions 19

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Lesson: SAP GUI

Lesson Overview

This lesson demonstrates the detailed functions of SAPGUI

Lesson Objectives

After completing this lesson, you will be able to:

- Distinguish the SAP standard menu from the role-specific menus
- Describe the role concept
- Describe the user assignment to roles

Business Example

The SAP GUI (SAP Graphical User Interface) is the standard point of entry to the SAP System. Employees can be assigned roles which provide a user-specific menu.

SAP GUI

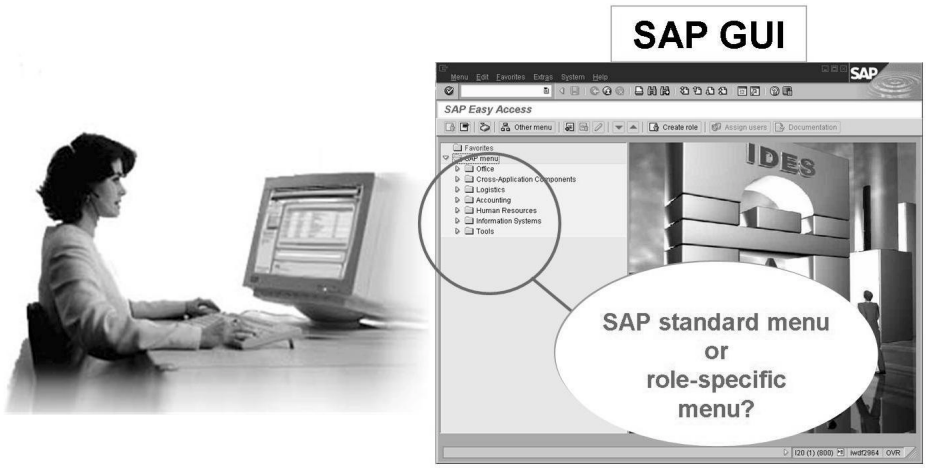

Figure 1: SAP GUI

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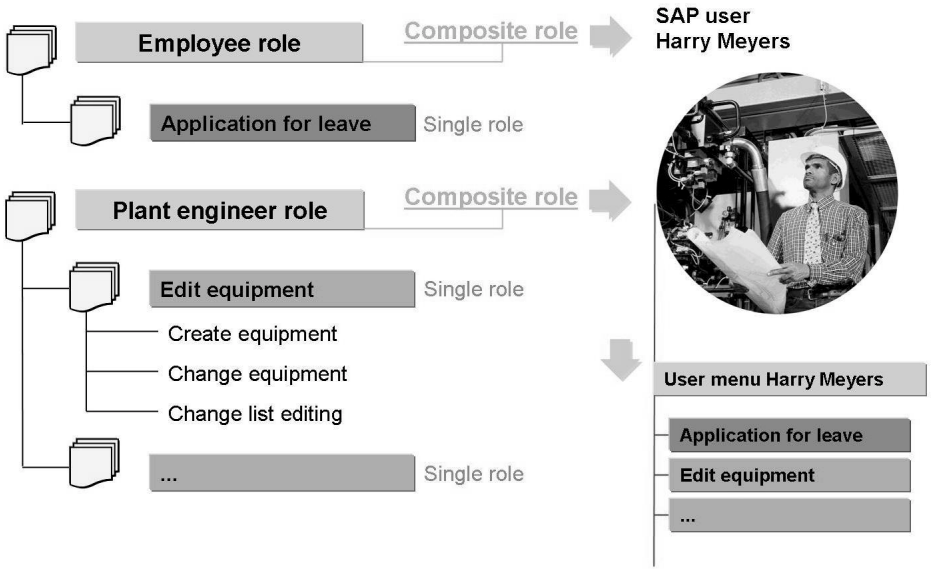

Figure 2: Functionality of a Role

The **composite roles** provide functions that require transactions in a separate menu.

Each composite role consists of a number of **single roles**. Each single role consists of a group of thematically organized transactions which are listed in the menu of the single role. The authorization for each transaction can be stored in the single roles.

One or more composite roles can be assigned to a SAP user. The user menu displays the total number of assigned composite roles for one user.

For example: Harry Meyers is an employee at IDES AG. He is a plant engineer. In his role as an employee, he must have access to all general functions, such as applying for leave. In his role as plant engineer, he has to organize all the technical items in maintenance. He (or his SAP user) receives the “Composite Roles” “Employee” and “Plant Engineer” assigned to him and obtains his user menu.

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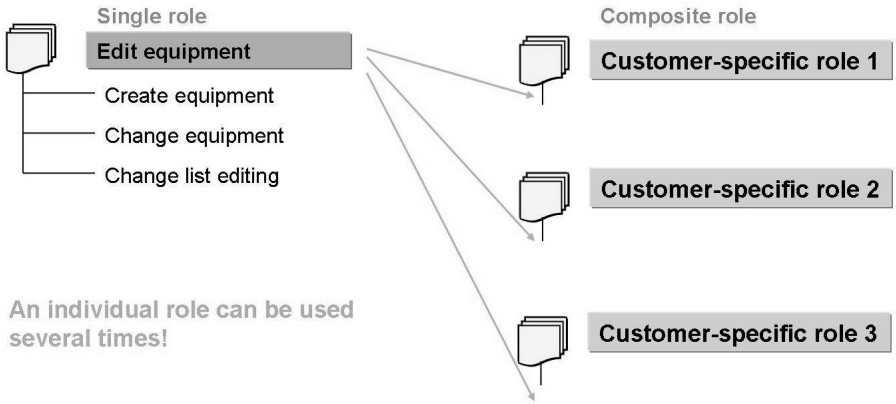

Figure 3: Single Roles

A single role comprises a number of transactions related to the same topic. In the standard system, predefined single roles are available for each application component.

Each single role contains a menu in which transactions and an authorization profile can be assigned. This profile can be generated automatically for the selected transactions and subsequently modified (Profile Generator). Authorization profiles can only be maintained at the individual role level and not at the composite role level.

A composite role is a function-oriented collection of single roles. When a composite role is assigned to a user, he or she automatically receives all authorization profiles of the single roles contained in the composite role.

Each single role can be used in any number of composite roles.

Maintaining Roles

To maintain a role:

- Create a single role (transaction PFCG)
- Create a menu
- Generate authorizations
- Create collective role
- Assign users

Create a single role: Activities that form a logical unit (for example, order processing) are grouped together to form a single role. You can use individual transactions, parts of the SAP menu, or area menus.

Create a single role: Instead of creating single roles, you can also copy and modify the single roles delivered by SAP.

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Create a menu: The transactions contained in a single role can be placed in any structure by creating folders.

Generate authorizations: You can automatically generate the required authorization profile for each role. You can modify this in expert mode.

Create composite role: A composite role groups together several single roles.

Assign users: Users who perform the same activities are assigned to composite roles. They automatically receive the corresponding authorization profiles.

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Lesson Summary

You should now be able to:

- Distinguish the SAP standard menu from the role-specific menus
- Describe the role concept
- Describe the user assignment to roles

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Lesson: Enterprise Portal

Lesson Overview

This lesson explains the concept of enterprise portals, in particular the mySAP Enterprise Portal, and introduces the Business Package for Assets.

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the concept of mySAP Enterprise Portal
- Explain the concept of the Business Package for Assets
- List key technical aspects of SAP Enterprise Portal's software components

Business Example

You can use portals to provide a standard HTML-supported point of entry for all required systems.

SAP Enterprise Portal

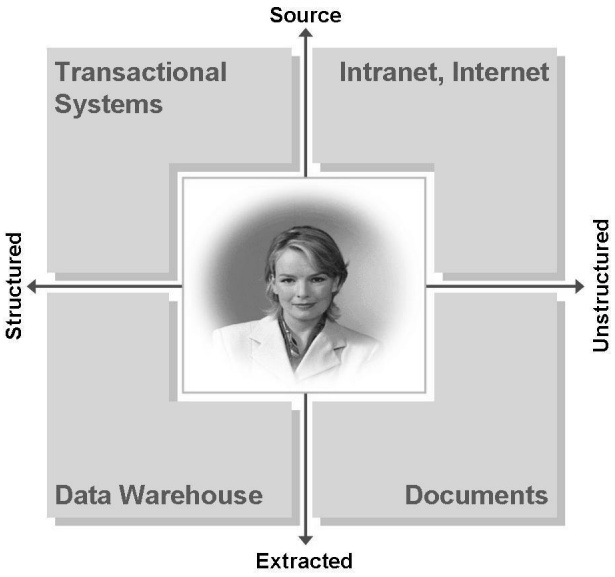

Figure 4: The Challenge: Complex IT Landscapes

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In the age of e-business, an enterprise's IT landscape is often very complex. It contains **information, applications and services** such as

- **Applications:** information stored in transaction systems such as CRM, ERP (like SAP R/3 Enterprise) and Legacy applications is usually only of use in the context of this solution. If, however, this data is used outside the context of an application, it results in increased efficiency and competitiveness.
- **Data Warehouse Systems:** increasing volumes and complexity of information make it progressively harder for users to find the data and evaluations in data warehouses that they require to support their decisions. Therefore business intelligence solutions that are both user-friendly and efficient are indispensable.
- **Intra and internet offers:** the web has become one of the most important sources of information for employees. One of the challenges this presents is to find ways to intelligently integrate the internet and traditional access to and use of web information into other enterprise systems.
- **Unstructured documents:** managing, maintaining and searching for texts, emails, CAD underwriting and other unstructured documents and content can quickly become extremely time-consuming. A solution for efficiently managing unstructured data can, however, transform these resources into important competitive advantages.

Therefore the user needs access to all these different resources. This usually involves special programs on the desktop and various logon procedures.

Speeding up access to the required information, applications and services is the primary goal of an **enterprise portal**. The target group here should not be limited to the employees of an enterprise. Using external portals, you can easily reach out to business partners, customers or interested parties.

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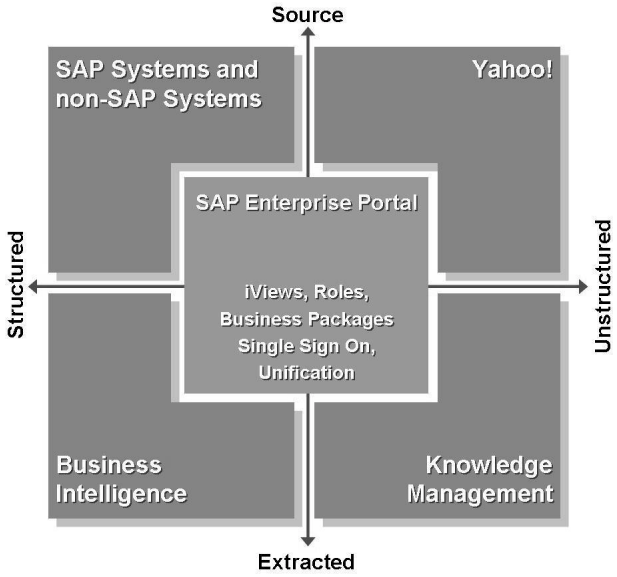

Figure 5: Enterprise Portals - SAP Enterprise Portal

A portal today must offer more than just a library of information and internet-supported access to applications. The next generation of enterprise portals must provide information, applications and services in a way that enables users to retrieve, exchange and analyze data quickly and easily, so that inter-company collaboration, efficiency of decision making and the ability to respond are significantly improved.

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SAP can call on many years' experience as a portal provider and with **SAP Enterprise Portal** it presents the latest generation of enterprise portal: one which provides the technical infrastructure for supplying specific information whilst covering all the requirements mentioned above.

- **System integration:** iViews are small applications that deliver up-to-date role-specific content, without the user having to request it. This could include important messages or hints about possible problems. In this way, a large number of iViews provide access to a wide range of systems in your enterprise.

  Using the patented Drag&Relate function (unification), users can work seamlessly with information from various sources: you just click on an object and drag it to another, activating specific functions.

- **Business Intelligence:** SAP integrates leading business intelligence solutions into its portal, thereby providing comprehensive analytical functions for a broad user base. Thanks to the latest Drag& Relate functions, data can be used in context in the portal and cross-referenced. This encourages collaboration and cooperation and makes it possible to quickly retrieve and link information from a variety of sources.
- **Internet and Yahoo!:** open standards enable easy linking of an external sources from the internet. Collaboration with Yahoo! includes enterprise-specific, editorially-prepared information.
- **Knowledge Management:** an integral part of the portal is provided by a Knowledge Management solution, which places this data in the correct interrelationship and makes it available for each user. This considerably simplifies retrieving, exchanging and editing unstructured information. This includes highly-developed functions for content management, for the retrieval and classification of information (TREX) and its distribution and for collaboration (SAP Collaboration Room).

SAP Enterprise Portal can basically be divided into two parts: the technological side and the business side.

The Technological Side

SAP Enterprise Portal is an integral part of the **SAP Netweaver** integration and technology platform, and consists of three major modules:

- The portal platform
- Knowledge Management
- Collaboration

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These modules are fully integrated with one another. This means that Knowledge Management requires the portal platform as its integration and runtime environment. Likewise, the Knowledge Management (KM) function is a prerequisite for Collaboration, whose functions are in turn used by KM.

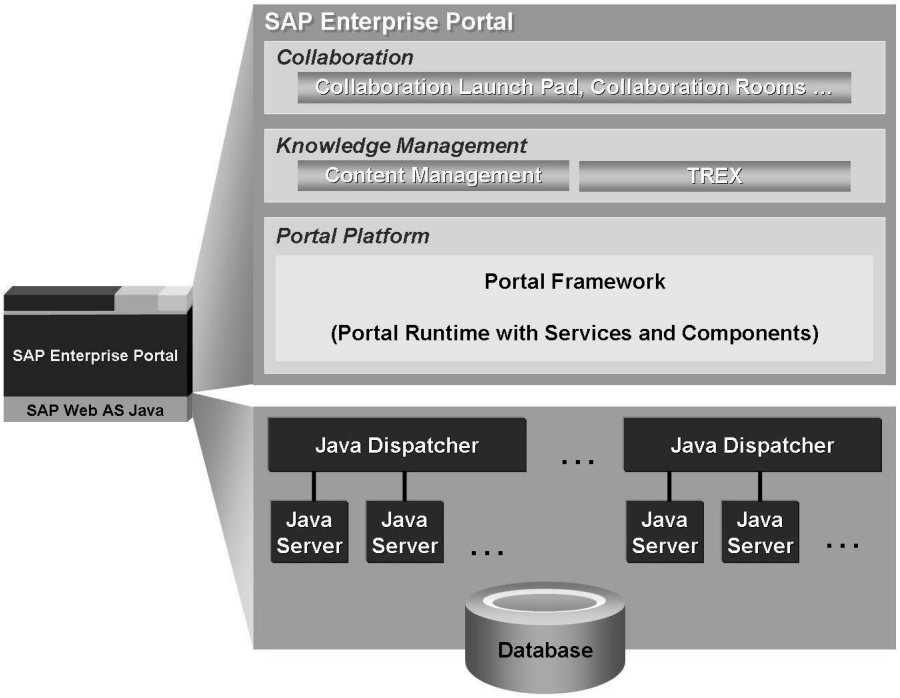

Figure 6: SAP Enterprise Portal's Modules

SAP Enterprise Portal's functions are provided by a close integration of various cooperating components.

An overview of SAP Enterprise Portal's modules:

The SAP Enterprise Portal on the SAP Web Application Server is a JavaScript application deployed in the *J2EE-Engine* of the SAP Web Application Server. The portal builds on the J2EE architecture implemented on the SAP Web Application Server.

Parts of the portal software initialize basic functions, such as loading applications in runtime, before other applications are launched. These applications then provide the core functions of the portal platform, such as integrating the SAP Web Application Server's *User Management Engine*.

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Apart from these basic functions, the portal also offers services that serve as an interface with the J2EE engine on the SAP Web Application Server. These interfaces are the *Portal Runtime Bridge (PRTBridge)* and the *Portal Runtime Container*.

Portal Platform The portal platform has on open architecture, enabling the integration of SAP NetWeaver components, such as Knowledge Management and Collaboration.

During the development phase, the portal platform provides tools for creating a wide variety of portal objects, such as iViews or pages, as well as tools for linking to back-end systems. During runtime, the portal platform ensures content is distributed to all users according to their portal role.

The following portal platform components are executed:

Portal Framework The *portal framework* is a logical environment consisting of a collection of software components. One of these components is *Portal Runtime*, which acts as the runtime environment for a wide variety of software components. Various functions, such as *Unification* and the *Connector Framework* are executed in this portal runtime.

Portal Content Directory The *Portal Content Directory* (PCD) is SAP Enterprise Portal's central persistence area, serving as a memory for portal content objects, such as roles, pages, iViews or their metadata. Access to this data is implemented in a service.

To do this, the PCD uses the SAP Web Application Server's database and determination procedure.

Knowledge Management (KM) is an SAP NetWeaver component that provides a central, role-specific access point to unstructured information from various data sources in the SAP Enterprise Portal. KM is based on the portal framework.

The KM platform consists of:

Content Management (CM)

Content management stores documents with their content and their properties. It contains documents from various sources and provides basic document services, such as structuring, navigation, version management, access controls, and so on.

Search and Classification (TREX)

TREX creates indexes for repositories and carries out full text search queries, property queries and taxonomy queries that retrieve the requested documents regardless of their storage location.

Collaboration with SAP NetWeaver provides services that support communication and cooperation in company-specific business processes. Collaboration enables project group members to collaborate independently of time and place. Collaboration provides users with virtual rooms that offer shared access and can be used for organizing documents and applications as well as exchanging ideas.

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Some **technical aspects of SAP Enterprise Portal's software components** are:

- The core functions are written in Java - this requires a J2EE runtime environment, provided in SAP Web AS by the **SAP J2EE Engine**.
- The architecture is completely **open** and supports the integration of any applications, information and services, independently of the system and platform. Some of the supported **standards** are SOAP, JCA, JAAS, LDAP, X.509, XML and ICE.
- The portal contains efficient **security functions**, including comprehensive support for LDAP (Lightweight Directory Access Protocol), digital certificates and the HTTPS-based SSL protocol (Secure Socket Layer). Single Sign-On and the standards-based internet security technology ensure the maximum possible security for user identification, for assigning authorization, as well as for data exchange.
- The SAP Enterprise Portal is highly **scalable** and can be accessed by thousands of users from any location. The basis for this is a platform-independent multi server architecture that allows for a trouble-free scaling of solutions to fit changing requirements.
- Since **mobile devices** are supported, users can access the information they need, regardless of time, place or system.

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The Business Side

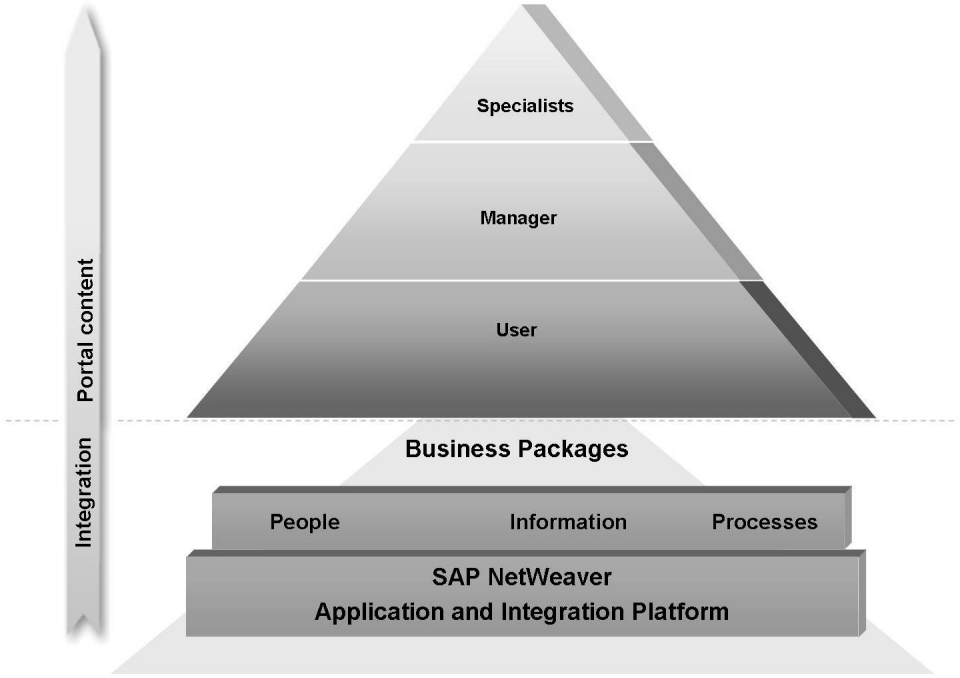

Figure 7: Business Packages Deliver Predefined Portal Content

Application-specific content is integrated into the portal in the form of so-called **Business Packages**. SAP's Business Packages provide **predefined portal content** that fulfils task and industry-specific requirements. Business Packages contain a range of iViews that deliver transactions, reports, documents, and so on from your various IT systems to the enterprise portal. Business Packages speed up the implementation of your enterprise portal, increase productivity, and lead to a fast return on your investment.

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To better meet the particular needs of users, managers and specialists, Business Packages are divided into three categories:

- **Business Packages for Users** cover all the tasks that every enterprise portal user carries out, regardless of his or her role in the company. They help beginners to quickly familiarize themselves with the enterprise portal environment, thereby increasing user acceptance. These Business Packages include emails, task lists, calendars, travel expenses, benefits administration, Employee Self Services, E-Learning, employee directory searches, and more.
- **Business Packages for Managers** can perform efficient analysis for decision-makers and provide information relevant for decisions. They also offer a wide range of tools for planning and managing personnel and budgets. Line managers, team managers and project leaders can thereby drastically reduce the time they spend on administration and concentrate on strategic tasks instead.
- **Business Packages for Specialists** are tailor-made for experts in financial accounting, sales, marketing and production. They deliver operational tools, analytical evaluations and time-critical warning messages for fast reaction based on the right information. Experts gain consistent, precise and up-to-date information from a wide variety of sources.

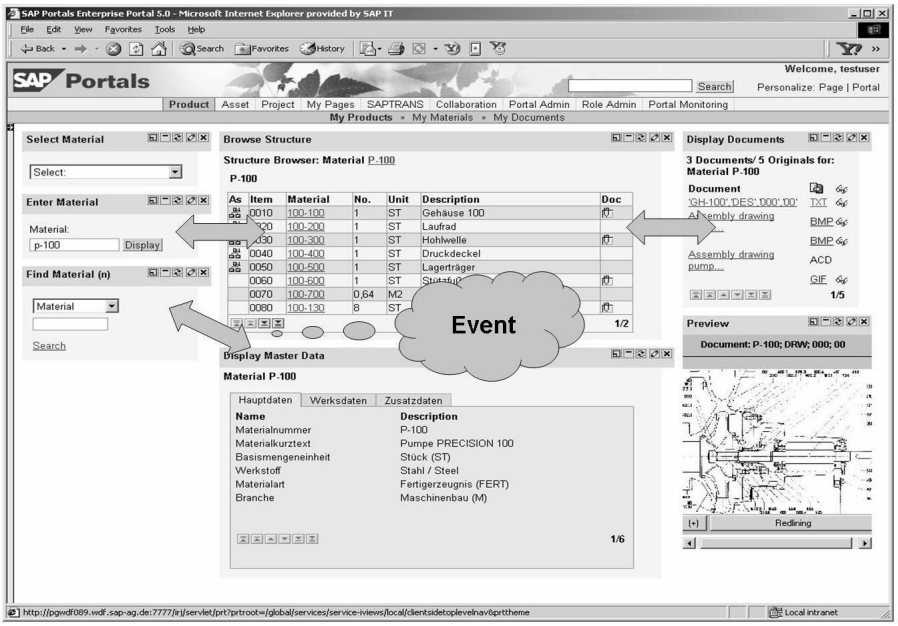

Figure 8: Business Package for Assets

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The **Business Package for Assets** provides an e-business solution that makes it possible for you to manage asset life cycles in a quality-oriented logistics supply chain. This requires up-to-date information about each phase in an asset's life cycle, which the portal supplies at all times to internal and external users. The Business Package for Assets consists of various iViews, integrating business and function. You can place iViews on any individual page in the portal.

Generally, only a few employees in any company maintain specific asset-related data, whereas far more employees require access to current data. The Business Package for Assets gives all your users easy access to asset-related data.

Introducing the Business Package for Assets into your company gives you the following advantages:

- Easy access to up-to-date, asset-related information
- An environment particularly suited to the occasional user
- Minimal training costs
- A single point of access to extensive asset-related data
- Efficient management of notifications and orders (for example, overviews, status information)
- Optimized business relations through internet-supported information exchange (Collaborative Engineering)
- Reduced and optimized communication cost and effort

A sample workset has been compiled for the **Business Package for Assets**, consisting of various pages. The following gives you an overview of the page content:

Overview: this page offers an initial summary of the current situation for asset notifications and orders.

Asset details: this page brings together iViews connected with technical assets data: asset structure, functional locations, equipment and the corresponding bills of material.

Worklist: here you can find a collection of iViews that support work with notifications and orders for equipment and/or functional locations.

Operations: this page displays all the operations assigned to the user's work center, or all the operations that are relevant to his or her personnel number. It is also possible to select operations using variants.

Installation locations: this portal page contains iViews that allow you to alter the installation location of equipment.

Documents: here you can find iViews that provide access to documents and the linked originals. You can compile a list of favorite asset documents.

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Classes: on this page you can procure information from the classification system. For example, you can search for classified objects in a selected class. So, for instance, if you have defect equipment, you can search for an exchange object with the same features.

BW reports: here you can display a BW report for one or more technical objects (equipment or functional locations) from the SAP Business Information Warehouse (SAP BW) component. The report results (for example, a table or a diagram) are shown in a new iView.

Figure 9: Flexible Configuration of the Asset Portal

An optimal working environment can be created with user and role-specific screen layouts using a range of standard-delivery iViews.

It is also possible to create user-defined iViews.

iView Definition (= integrated View):

> A program that retrieves information from almost any back-end system, the internet or intranet and that displays the portal's content area in a definable layout.

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Lesson Summary

You should now be able to:

- Explain the concept of mySAP Enterprise Portal
- Explain the concept of the Business Package for Assets
- List key technical aspects of SAP Enterprise Portal's software components

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Lesson: Mobile Solutions

Lesson Overview

This lesson presents important aspects of the mobile infrastructure and the mobile application Mobile Asset Management.

Lesson Objectives

After completing this lesson, you will be able to:

- Describe online scenarios
- Describe offline scenarios
- List the basic functions of Mobile Asset Management

Business Example

Mobile Solutions enable access to the SAP system using laptops and PDAs. You can work online or offline with them.

Online Scenario

Figure 10: Mobile Solutions

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- Online

Advantages:

- Independence on site
- Immediate data entry
- Improved data quality by avoiding transfer errors
- Permanent access to current data

Technology:

- Mobile telephone – WAP service IK72w
- Wireless PDA – HTML service IK72hh

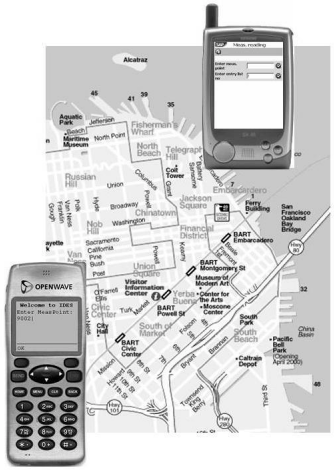

Figure 11: Online Scenario

Various inspection tasks in the maintenance and customer service areas can be carried out with laptops and PDAs.

The following scenarios are supported:

- Entering measurement readings and counter readings
- Entering damage codes
- Entering malfunction reports (optional)
- Entering short texts (only with HTML scenario)
- Validation checks of the entered values

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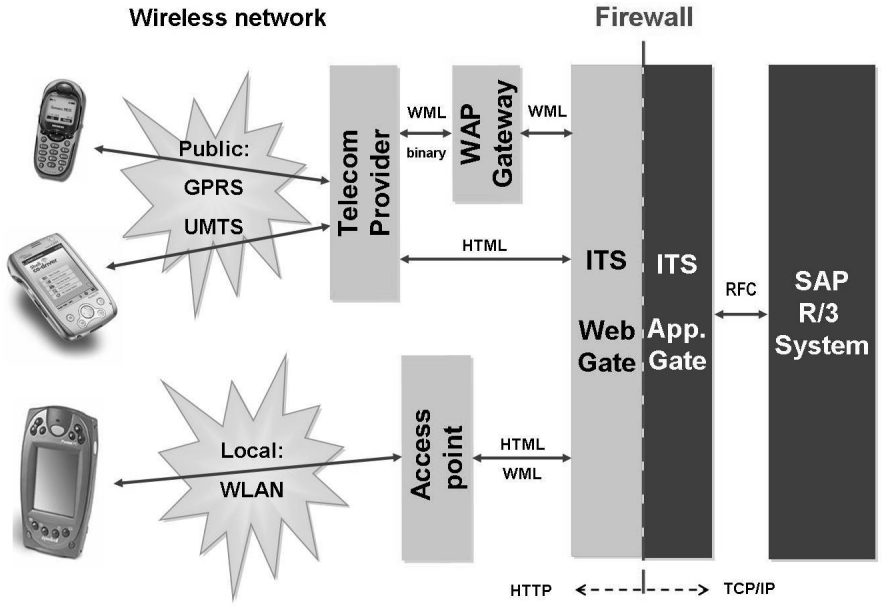

Figure 12: System Landscape for Wireless Applications

SAP Note 367222 contains further information about WAP scenarios.

SAP Note 507570 contains further information about HTML scenarios.

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Offline Scenario

- Offline

Advantages:

- Mobile processing more complex for maintenance tasks
- Offline processing
- Runs on nearly all PDA's

Technologie:

- Mobile Engine (mySAP Mobile Business)

Figure 13: Offline Scenario

Mobile Infrastructure (MI)

The offline scenario (a part of the mySAP Mobile Business solution) enables you to process complex maintenance tasks on a PDA or mobile terminal, without having to be constantly connected to the backend system.

The PDA or mobile terminal has access to a local installation, the **MI Client** (Mobile Infrastructure Client). This contains the following components:

- Platform-independent runtime environment
- Local database
- Synchronization mechanism
- Application management
- User administration

The MI Client communicates with the **MI Server**, which is based on the Web Application Server. This provides the connection to the backend system, amongst other things.

The mobile infrastructure (MI) is a part of **SAP Netweaver**, the central technology and integration platform.

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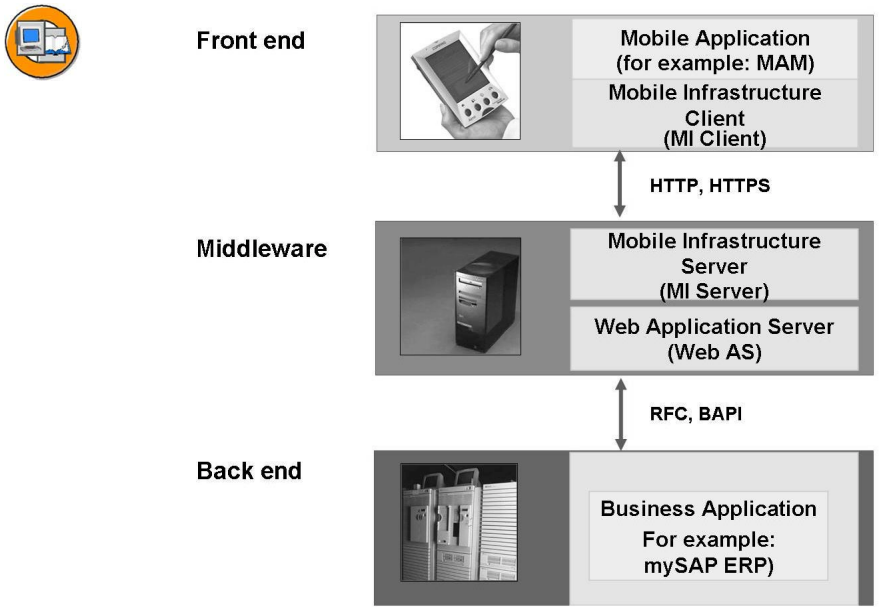

Figure 14: Mobile Business Architecture

Mobile Asset Management (MAM)

Mobile applications are based on the mobile infrastructure.

The Mobile Asset Management application:

- Displays technical objects
- Displays notifications with order assignment
- Confirms actual times
- Books goods issue to the order
- Executes local availability checks
- Creates/processes notifications and orders (February 03)
- Assembles and dismantles equipment
- Enters measurement documents
- Provides local material management

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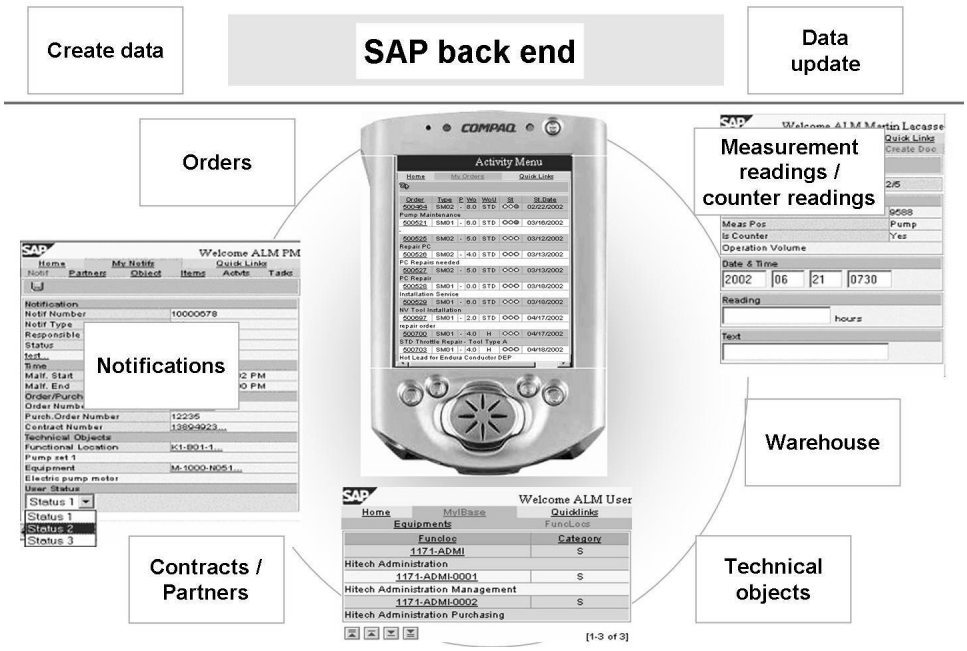

Figure 15: Mobile Asset Management - Functions

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Lesson Summary

You should now be able to:

- Describe online scenarios
- Describe offline scenarios
- List the basic functions of Mobile Asset Management

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Unit Summary

You should now be able to:

- Distinguish the SAP standard menu from the role-specific menus
- Describe the role concept
- Describe the user assignment to roles
- Explain the concept of mySAP Enterprise Portal
- Explain the concept of the Business Package for Assets
- List key technical aspects of SAP Enterprise Portal's software components
- Describe online scenarios
- Describe offline scenarios
- List the basic functions of Mobile Asset Management

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Unit 2

Notification

Unit Overview

This chapter links chapters on *Malfunction-based Maintenance* and *Planning Maintenance* from course PLM300 and reviews the concept of notification. Subsequently, the relevant Customizing settings, as well as a range of detailed functions in the application will be shown.

Unit Objectives

After completing this unit, you will be able to:

- Record maintenance requirements using general notification and maintenance notification
- Define new notification types and assign basic parameters
- Configure tab pages and screen areas for maintenance notifications
- Define simple and enhanced views for maintenance notifications
- List further detail functions for configuring the notification interface
- Carry out the relevant Customizing settings for priorities
- Influence the field selection of a notification type
- Define a new object information key
- Define and configure catalogs
- Define catalog profiles and list allocation options
- Use additional notification functions, such as action boxes
- List and use key notification Customizing settings

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Lesson: Notification Category, Notification Type

Lesson Overview

This lesson presents the assignment of notification type to notification category and the basic settings for notification types.

Lesson Objectives

After completing this lesson, you will be able to:

- Record maintenance requirements using general notification and maintenance notification
- Define new notification types and assign basic parameters

Business Example

In maintenance processing, you use a notification to collect maintenance requirements.

A company should have its own notification type for requirements set up.

Notification Category, Notification Type

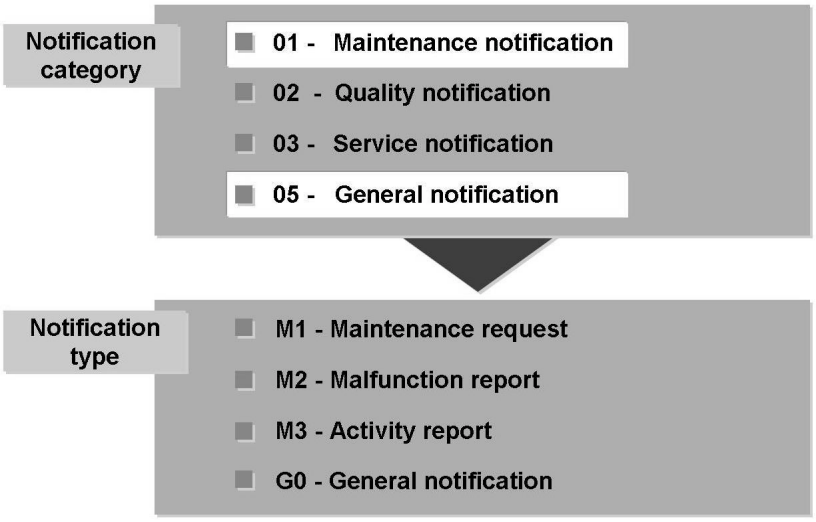

Figure 16: Notification Category, Notification Type

You can use maintenance notifications (notification category 01, notification type M1 or M2) to enter and process requirements and malfunctions.

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Alternatively you can create a general notification (notification category 05, notification type G0, for example), which is initially created in central message creation.

General notification uses a simple entry screen for entering the requirement into the system - you do not have to define the type (for example, malfunction, request, complaint, internal problem notification).

You can only decide the type in the second step by changing the notification type *General Notification* to the specific notification type (for example, *Malfunction Report*). In the subsequent notification, the maintenance planner adds all the missing details.

The advantage of using general notifications is that you can make a central, coordinated entry for any kind of requirement. The person making the entry does not have to be a trained maintenance planner.

In the R/3 System, you use the notification type to assign notifications to the individual applications.

You can use the individual notification types to define different classes of maintenance notifications and then use these classes when making selections. You can use the notification type to define the use of the maintenance notification for particular business processes. In the standard system, notification types are structured according to functional criteria (malfunction notification, maintenance request, activity report).

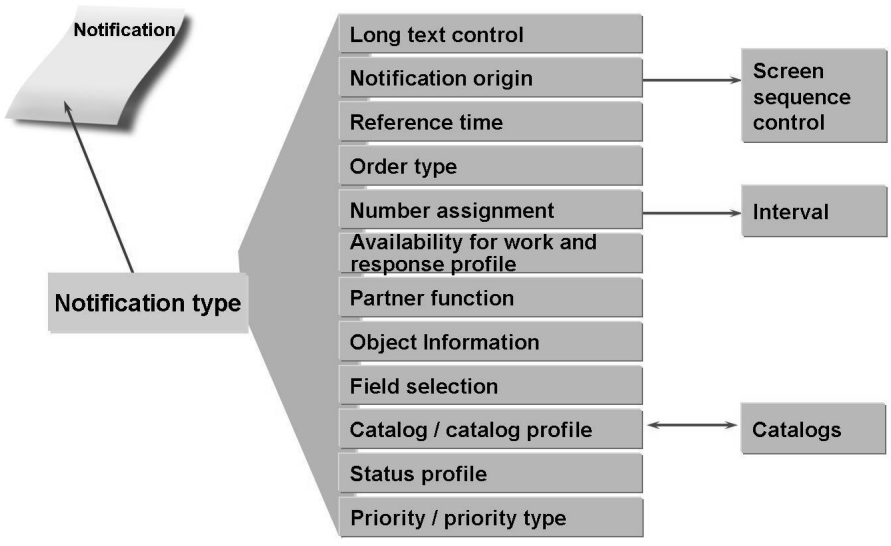

Figure 17: Settings for Notification Types

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The following settings are available for notification types:

- **Long text control**

  This allows a text to be locked and added to a log line (changed by, date of change, etc).

- **Notification origin**

  Define the basic character of a notification (for example, requirement, malfunction report, etc.)

- **Reference time**

  The time suggested for notification completion, which can then be set in the notification history.

- **Order type**

  Default of a notification type when creating an order from a notification.

- **Number assignment**

  The number range used.

- **Availability for work and response profile**

  A way to define at what times the notification processing should be performed with a notification partner. The availability times defined in the availability profile serve as a basis for calculating the start up and end dates. The expected duration for implementing the measure is defined for each measure code in the response profile.

- **Partner function**

  Contact persons should be made available for both notification and order processing (supplier, customer and so on)

- **Object Information**

  Information concerning the reference object of the notification or the order as well as the notification or the order can be displayed.

- **Field selection**

  Selection and controlling in the fields used in the notification.

- **Catalog / catalog profile**

  Any area of the findings (object parts, damage, cause of damage and so on) can be assigned to the the notification type catalog which can be selected from the findings code. The catalog profile limits the choice of code groups referring to specific areas (car type, data processing, production machines and so on)

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- **Status profile**

  A status profile contains various user status controlled by the processing operations in the entire system.

- **Priority / priority type**

  This allows the notifications to be prioritized with suggested dates.

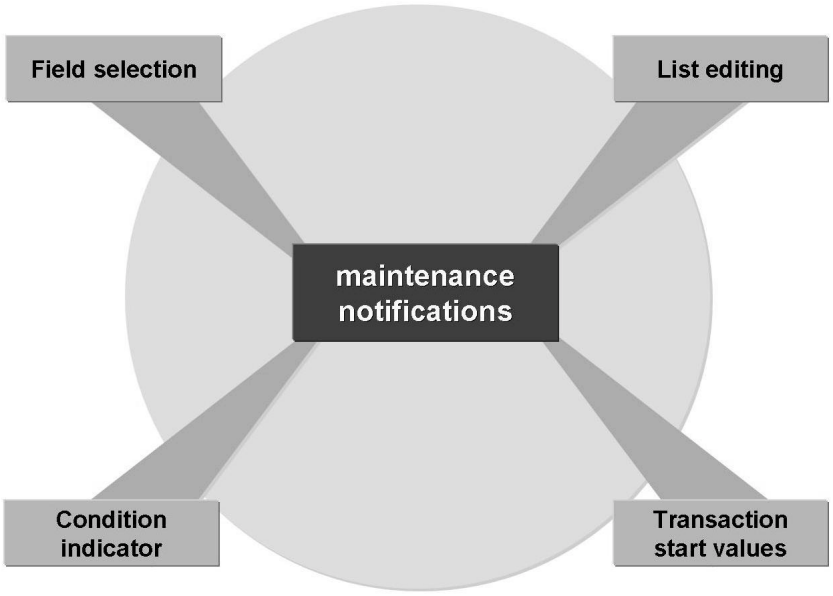

Figure 18: General Settings for Maintenance Notifications

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The following settings can be used for all types of notification:

- **Field selection**

  The field selection for notifications allows you to control certain fields together for all notification types (for example, light color for the notification from and notification date fields).

- **List editing**

  List editing for notifications can be set in customizing so that they have defaults for selection screens (default values on the report initial screen), field selection (which fields can be selected, suppressed, and so on) and the order in which the fields are displayed.

- **The system condition indicator**

  The system condition indicator defines the conditions that a technical system can have (operational, out of order, and so on). These settings are defined at client level and are not dependent on the notification type.

- **Transaction start values**

  The transaction start values for a notification transaction define whether an initial screen should be displayed and which default notification type should be used. Initial Screen must be selected if you want to access the initial screen with the field for the notification number and notification type. You can also define which screen should be the first detail screen. The notification header screen is the initial screen in the standard system, but this can be changed.

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Exercise 1: Notification Category, Notification Type

Exercise Objectives

After completing this exercise, you will be able to:

- Create notification types
- Define notification parameters

Business Example

In your company, a new notification type is to be created for entering requirements.

The relevant notification parameters should be optimally configured for this purpose.

Task 1:

Display an existing notification type:

1. Display the existing notification type **N1**. Which Customizing function do you choose?
2. To which notification category is notification type N1 assigned, and which other notification categories exist?
3. What is defined by the origin indicator?
4. What is defined by the reference date/time?
5. What effect does the *Early Number Allocation* indicator have?

Task 2:

Creating a new notification type

1. Control parameters

   Create a **new notification type ##** as a copy of notification type N1.

   This notification type should have the following properties:

   – It should have the same character of a general maintenance notification.

   –The reference date/time should be the notification completion.

   – The catalog profile General Findings procedure should be assigned.

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– The update group is 26.

– The number assignment should be made upon saving.

Which control parameters do you set?

Notification origin	
Reference time	
Catalog profile	
Update group	
Early number allocation	

2. Screen area notification header

   The screen type for the notification header is *Maintenance Notification*. The screen type for the reference object is *Equipment Only*.

   In which Customizing option can you enter these settings?

3. Long text control

   It should be logged who entered the long text for all notifications that are created with your notification type ##. It should not be possible to change the long text at a later date. How do you do this?

4. Number range

   Assign your notification type ## to the number range of the group of maintenance notifications. How do you do this?

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Solution 1: Notification Category, Notification Type

Task 1:

Display an existing notification type:

1. Display the existing notification type **N1**. Which Customizing function do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Notification Types

2. To which notification category is notification type N1 assigned, and which other notification categories exist?

   a) N1 is assigned to the notification category 01 (= Plant maintenance). Other notification categories are 02 (= Quality notification) and 03 (= Service notification).

3. What is defined by the origin indicator?

   a) The origin indicator specifies the screen sequence on which the notification type is based. In other words, those which are under tabs assigned to the origin indicator or screen areas of a business process, for example a malfunction report, an activity report.

4. What is defined by the reference date/time?

   a) Date and time proposed when you complete the maintenance notification.

5. What effect does the *Early Number Allocation* indicator have?

   a) The indicator causes the notification to be assigned a number when the Create function is called, and not just when it is saved.

Task 2:

Creating a new notification type

1. Control parameters

   Create a **new notification type** ## as a copy of notification type N1.

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This notification type should have the following properties:

– It should have the same character of a general maintenance notification.

–The reference date/time should be the notification completion.

– The catalog profile General Findings procedure should be assigned.

– The update group is 26.

– The number assignment should be made upon saving.

Which control parameters do you set?

Notification origin	
Reference time	
Catalog profile	
Update group	
Early number allocation	

a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Notification Types***

Field Name or Data Type	Values
Notification origin	`General notification`
Reference time	`D`
Catalog profile	`1000`
Update group	`26`
Early number allocation	`Deselected`

2. Screen area notification header

The screen type for the notification header is *Maintenance Notification*. The screen type for the reference object is *Equipment Only*.

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In which Customizing option can you enter these settings?

a) Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications Overview of Notification Type

Select the line containing the notification type.

In the dialog structure, double click the option *Screen Areas in Notification Header*.

Field Name or Data Type	Values
Screen type hdr	`H100`
Screen category object	`O150`

3. Long text control

It should be logged who entered the long text for all notifications that are created with your notification type ##. It should not be possible to change the long text at a later date. How do you do this?

a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Overview of Notification Type***

Select the notification type, and in the dialog structure double click the line *Format Long Text*.

Select *Log Line* and activate *No Text Change*.

4. Number range

Assign your notification type ## to the number range of the group of maintenance notifications. How do you do this?

a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Number Ranges***

Set the indicator for the interval *Maintenance Notification*. Select *Maintain Groups*, double-click notification type ##, and then assign the notification type to the interval using *Assign Element/Group*.

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Lesson Summary

You should now be able to:

- Record maintenance requirements using general notification and maintenance notification
- Define new notification types and assign basic parameters

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Lesson: Configuration of the Notification Interface

Lesson Overview

This lesson presents various options for configuring the notification interface.

Lesson Objectives

After completing this lesson, you will be able to:

- Configure tab pages and screen areas for maintenance notifications
- Define simple and enhanced views for maintenance notifications
- List further detail functions for configuring the notification interface

Business Example

A company should have the notification type for requirements configured optimally for entering the requirements. All the screen areas required should be available on the initial screen if possible. All other screen areas should be accessible using tab pages.

Configuration of the Notification Interface

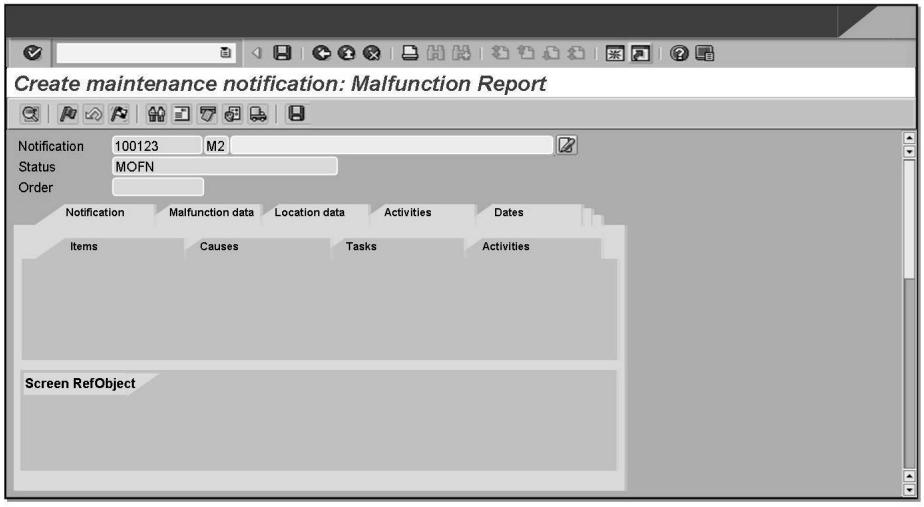

Figure 19: Configuration of Tabs

You can configure tabs for each notification type. A total of 20 different tab pages are available (16 notification-based, 4 item-based).

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You can define a simple view or an enhanced view for each notification type. This means that a very simple screen appears for the person entering the notification, but that all details appear for the person processing it. Different transactions enable you to use the two notification type views:

- The plant maintenance transactions IW24 (Malfunction Report), IW26 (Request) and IW25 (Activity Report) access the enhanced view.
- The transaction IQS21 accesses the basic view.

You can define screen areas (subscreens) for each tab. 16 different screen areas are available.

You can assign the tabs their own internal heading and a graphical symbol, if required.

You can easily activate or deactivate predefined tabs pages.

Within a notification type, you can also specify different layouts for the notification screen, for example, to distinguish between display mode and change mode. For example, you might want only core data to be visible in display mode, whereas all data should be displayed in change mode. This is controlled using activity categories (create, change and display).

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Exercise 2: Configuration of the Notification Interface

Exercise Objectives

After completing this exercise, you will be able to:

- Configure the notification interface

Business Example

In your company, a new notification type is to be created for entering requirements.

The notification interface should be optimally configured for this purpose.

Task:

For the notification type ##, create five tabs with the screen areas specified below.

1. How do you do this?

_____

_____

_____

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Notification	• Screen RefObject • Subject and long text (Windows 32bit) • Basic dates • Areas of responsibility • Item + cause
Item overview	• Overview of all notification items with activities, causes, tasks
System availability	• System availability • Effect on system
Activities	• Activities for notification header
Maintenance plan	• Use task list as the tab header

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Solution 2: Configuration of the Notification Interface

Task:

For the notification type ##, create five tabs with the screen areas specified below.

1. How do you do this?

_____

_____

_____

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Notification	• Screen RefObject • Subject and long text (Windows 32bit) • Basic dates • Areas of responsibility • Item + cause
Item overview	• Overview of all notification items with activities, causes, tasks
System availability	• System availability • Effect on system
Activities	• Activities for notification header
Maintenance plan	• Use task list as the tab header

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Overview of Notification Type

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Select the notification type and in the Dialog Structure, double-click the line *Screen Structure for Extended View*.

Select *New Entries* and make the following entries:

Notification tab

Field Name or Data Type	Values
Tab	`10\TAB01`
Tab header	`Notification`
Tab	`✓; Data release`
Screen area 1	`005`
Screen area 2	`032`
Screen area 3	`040`
Screen area 4	`010`
Screen area 5	`015`

Select *Next Entries*.

Task list tab

Field Name or Data Type	Values
Tab	`10\TAB08`
Tab header	`Maintenance plan`
Tab	`✓; Data release`

Select *Next Entries*.

Item overview tab

Items main tab

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Field Name or Data Type	Values
Tab	10\TAB10
Tab header	Items
Tab	✓; Data release
Screen areas	None

Select *Next Entries*.

Item overview lower-level tab

Field Name or Data Type	Values
Tab	20\TAB01
Tab header	Item overview
Tab	✓; Release data
Screen areas	None

Select *Next Entries*.

Activities lower-level tab

Field Name or Data Type	Values
Tab	20\TAB04
Tab header	Activities
Tab	✓; Release data
	None

Select *Next Entries*.

Causes lower-level tab

Field Name or Data Type	Values
Tab	20\TAB02
Tab header	Causes
Tab	✓; Data release
Screen areas	None

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Select *Next Entries*.

Tasks lower-level tab

Field Name or Data Type	Values
Tab	20\TAB03
Tab header	Tasks
Tab	✓; Data release
Screen areas	None

Select *Next Entries*.

System availability main tab

Field Name or Data Type	Values
Tab	10\TAB04
Tab header	System availability
Tab	✓; Data release
	None

Select *Next Entries*.

Activities main tab

Field Name or Data Type	Values
Tab	10\TAB12
Tab header	Activities
Tab	✓; Data release
Screen areas	None

Save and select Back.

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Lesson Summary

You should now be able to:

- Configure tab pages and screen areas for maintenance notifications
- Define simple and enhanced views for maintenance notifications
- List further detail functions for configuring the notification interface

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Lesson: Priorities

Lesson Overview

This lesson presents the relevant Customizing settings for priorities.

Lesson Objectives

After completing this lesson, you will be able to:

- Carry out the relevant Customizing settings for priorities

Business Example

The project team would like to define some priorities for maintenance processing. These must be defined and configured in Customizing.

Priorities

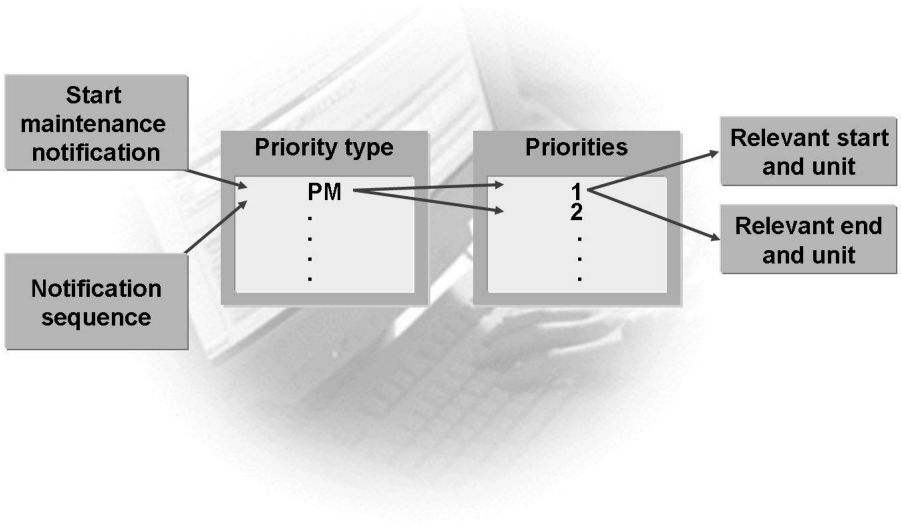

Figure 20: Priorities

A priority can be assigned to each maintenance notification and order. This priority defines the required start and end dates for the notification or order, relative to the creation date.

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During maintenance processing, you can work with internal priority types for notifications and orders. Since you can define an unlimited number of priorities for each priority type, it is easier for you to use the same priority types for notifications and orders. The same priority keys have the same meaning.

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Exercise 3: Priorities

Exercise Objectives

After completing this exercise, you will be able to:

- Configure the notification interface

Business Example

In your company, a new notification type is to be created for entering requirements.

The notification interface should be optimally configured for this purpose.

Task 1:

1. Define a new priority type ##. Which Customizing path do you choose?
2. Define three priorities A, B and C for your priority type. Set all the proposed start dates to today, and set the required end dates to today (A), a week today (B), and two weeks today (C). Which entries do you make?

Priority	Rel. Start	Rel. End	Unit Start	Unit End
A				
B				
C				

3. Assign the priority type ## to your notification type ##. How do you do this?

Task 2:

Create maintenance notification

1. Create a new maintenance notification with notification type ## for your equipment TEQ-##.

   Which notification number is assigned?
2. Which reference object can you enter?
3. Choose priority C. Which dates are set by the system?
4. Enter a long text. What entry has been made?
5. Save the notification. Which number do you receive?

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Solution 3: Priorities

Task 1:

1. Define a new priority type ##. Which Customizing path do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Response Time Monitoring → Define Priorities

   In the *Choose Activity* dialog box, place the cursor in the *Define Priority Types* line and select *Choose*. Select *New Entries*, and enter the priority type ##. Save and select Back.

2. Define three priorities A, B and C for your priority type. Set all the proposed start dates to today, and set the required end dates to today (A), a week today (B), and two weeks today (C). Which entries do you make?

Priority	Rel. Start	Rel. End	Unit Start	Unit End
A				
B				
C				

   a) In the *Choose Activity* dialog box, place the cursor in the line *Define Priorities for Each Priority Type*, and select *Choose*.

   Select *New Entries*.

Priority	Rel. Start	Rel. End	Unit Start	Unit End
A			DAY	DAY
B		7	DAY	DAY
C		14	DAY	DAY

   Save and select Back

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3. Assign the priority type ## to your notification type ##. How do you do this?

   a) In the *Choose Activity* dialog box, place the cursor in the line Assign Priority Types to Notification Types, and select *Choose*.

      Assign the priority type to the notification type.

Task 2:

Create maintenance notification

1. Create a new maintenance notification with notification type ## for your equipment TEQ-##.

   Which notification number is assigned?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification → Create (General)***

      Enter notification type ##;

      As the number is assigned at a late stage, a dummy number is used initially.

2. Which reference object can you enter?

   a) *Only equipment*

3. Choose priority C. Which dates are set by the system?

   a) *Required start: Current date*

      Required end: Current date + 14 days

4. Enter a long text. What entry has been made?

   a) *User, date, time*

5. Save the notification. Which number do you receive?

   a) *1000xxxx*

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Lesson Summary

You should now be able to:

- Carry out the relevant Customizing settings for priorities

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Lesson: Field Selection and Object Information

Lesson Overview

This lesson shows the different ways you can influence the field selection for a notification.

In addition, setting up object information is demonstrated.

Lesson Objectives

After completing this lesson, you will be able to:

- Influence the field selection of a notification type
- Define a new object information key

Business Example

The project team would like to define a new object information key that is tailored to the processes in the enterprise. For example, you want to display object information automatically when a notification is created.

In addition, it should be possible to influence the field selection in the notification. For example, individual fields should be declared as required entry fields.

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Field Selection

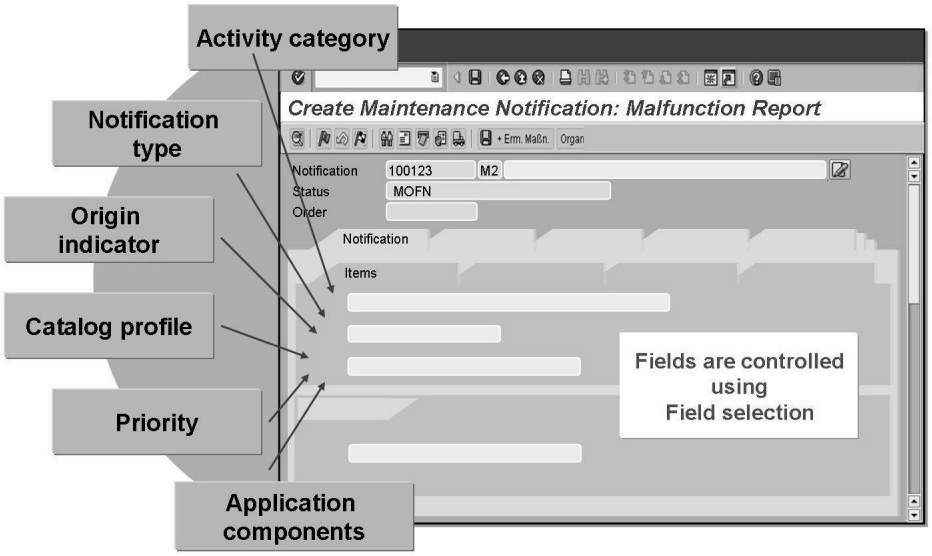

Figure 21: Field Selection for Notifications - Influencing Factors

Field selection determines the features of the different fields in a master record or transaction: ready for input (optional), required entry field, display field, cannot be displayed, highlighted.

For example, you can use field selection to specify the Priority field in the notification to be a required entry field instead of an optional one. In this example, *Priority* would be a modifiable field. For example, only notifications of notification type *NB* should have the priority as a required entry. In this case, the notification type is an influencing factor. Several fields that influence notifications are listed above. Each time a notification is created with notification type *NB*, the *Priority* field is a required entry field. It is also possible to define these rules for a field without including specific influencing factors.

All fields that can be modified are assigned to one screen group. Some objects, for example, work centers, are linked to several screen groups. Double-click the screen group that contains the fields you would like to use and change the field selection.

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Object Information

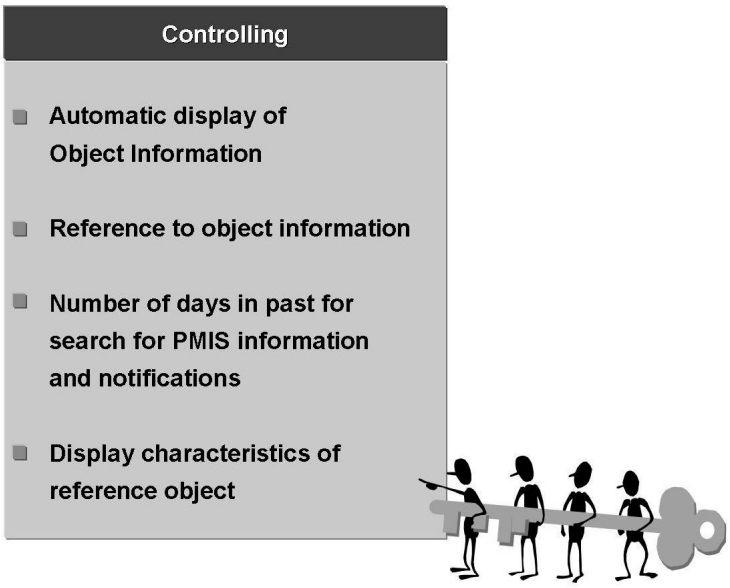

Figure 22: Object Information Key

The object information key controls:

- Automatic display of object information
- Reference to object information
- Number of days in past to search for PMIS info and notifications
- The display of characteristics for the reference object

The object information key defines how the object information is displayed in notifications and orders.

If the *Automatically* indicator is set, the system automatically displays the object information in the notification as soon as the reference object is entered or changed.

The reference specifies whether the object information should relate only to the reference object, to the reference object and all superior objects in the technical hierarchy, or to all objects in the reference object structure.

You can specify the number of days in the past (from the time of the query) the system should search for the statistics from the information system (breakdowns reported, notifications created, and so on).

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You can also enter such a search period for finding notifications. You can also define whether the system should display completed or outstanding notifications, and not only notifications with the status *In processing* or *Outstanding*.

If the indicator for characteristics is set, the characteristics of the reference object are displayed, provided it has been assigned to a class.

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Exercise 4: Object Information

Exercise Objectives

After completing this exercise, you will be able to:

- Define the object information key
- Retrieve object information

Business Example

In your company, a new notification type is to be created for entering requirements.

The object information should be optimally configured for this purpose.

Task:

1. Defining Object Information Keys

   Define a new object information key ##; this key should be displayed automatically when you create a notification. The analysis data should only relate to the object entered. As soon as the threshold value of 500 completed orders is exceeded, the system should display this information. The evaluation should take the previous two years into consideration. All notifications should be considered, but no contracts. The characteristic information should be displayed.

   Which parameters do you set?

Automatically	
Reference for notification and class selection	
Completed orders	
No. days	
Contract	
Classification	

2. Assigning an Object Information Key

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Assign the object information key ## to the notification type ##. How do you do this?

3. The pump **P-1000-N001** is to undergo a general overhaul.

   Create a maintenance notification with notification type **##** for the equipment P-1000-N001. Establish the following general information about the pump:

   What information is contained in the object information?

   From which date is the selection made?

   _____

   How many completed orders are there?

   _____

   What is the diameter of the running wheel?

   _____

   Which documents are assigned?

   _____

   _____

   Save the maintenance request. Which number is assigned to it?

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Solution 4: Object Information

Task:

1. Defining Object Information Keys

   Define a new object information key ##; this key should be displayed automatically when you create a notification. The analysis data should only relate to the object entered. As soon as the threshold value of 500 completed orders is exceeded, the system should display this information. The evaluation should take the previous two years into consideration. All notifications should be considered, but no contracts. The characteristic information should be displayed.

   Which parameters do you set?

Automatically	
Reference for notification and class selection	
Completed orders	

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No. days	
Contract	
Classification	

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Object Information → Define Object Information Keys

Select *New Entries*.

Feldname oder Datenart	Value
Automatically	`Select`
Reference for notification and class selection	`Object`
Completed orders	`500`
No. days	`730`
Outstdg notifications	`Select`
Contract	`None`
Classification	`Characteristics`

2. Assigning an Object Information Key

Assign the object information key ## to the notification type ##. How do you do this?

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Object Information → Assign Object Information Keys to Notification Types

3. The pump **P-1000-N001** is to undergo a general overhaul.

Create a maintenance notification with notification type **##** for the equipment P-1000-N001. Establish the following general information about the pump:

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What information is contained in the object information?

From which date is the selection made?

_____

How many completed orders are there?

_____

What is the diameter of the running wheel?

_____

Which documents are assigned?

_____

_____

Save the maintenance request. Which number is assigned to it?

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification → Create General***

Enter notification type ##;

enter Equipment P-1000-N001

In the reference object screen area, choose the *Object Information* symbol (blue-white I-button).

From which date is the selection made?	`Current date -2 years`
How many completed orders are there?	`see the Compl.Ord field`
What is the diameter of the running wheel?	`130 mm`
Which documents are assigned?	`P-1000`

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Lesson Summary

You should now be able to:

- Influence the field selection of a notification type
- Define a new object information key

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Lesson: Catalogs and Catalog Profile

Lesson Overview

This lesson explains the definition and use of catalogs and catalog profiles.

Lesson Objectives

After completing this lesson, you will be able to:

- Define and configure catalogs
- Define catalog profiles and list allocation options
- Use additional notification functions, such as action boxes

Business Example

The project team would like to evaluate technical findings in the system. To this end, catalogs are to be defined. To make it easier to enter findings, catalog profiles are to be defined and assigned notification types or technical objects.

Catalogs and Catalog Profile

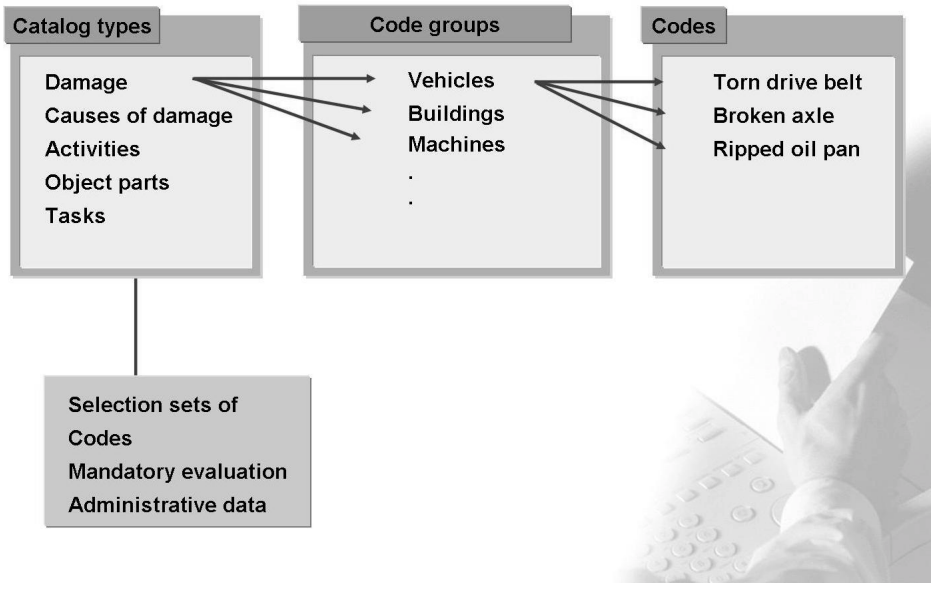

Figure 23: Catalogs

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A cross-application catalog system is used for reporting maintenance notifications. This catalog system has a hierarchical structure.

The first level of the catalog system is the catalog type. Each catalog type represents a certain directory.

Each catalog type can be further subdivided using code groups.

You can define individual codes in each group.

The following catalog types are provided as standard for Plant Maintenance:

- Catalog 2 for tasks
- Catalog 5 for causes of damage
- Catalog A for activities
- Catalog B for object parts
- Catalog C for damage
- To define your own catalog type, use catalog types R to Z.

You can define appropriate keywords for the standard catalogs of damage and problem codes. These words appear in the notification item as keywords for the respective catalog displayed.

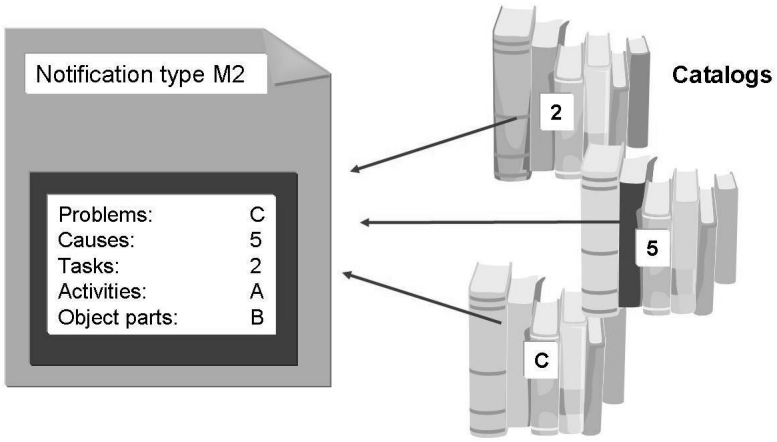

Figure 24: Assigning Catalogs to Notification Types

In Customizing, catalogs are assigned to each notification type for the following predefined areas: problems, causes, tasks, activities and object parts.

The corresponding fields for cause of damage, object part and so on, are only provided in the notification item after catalogs have been assigned to the notification type.

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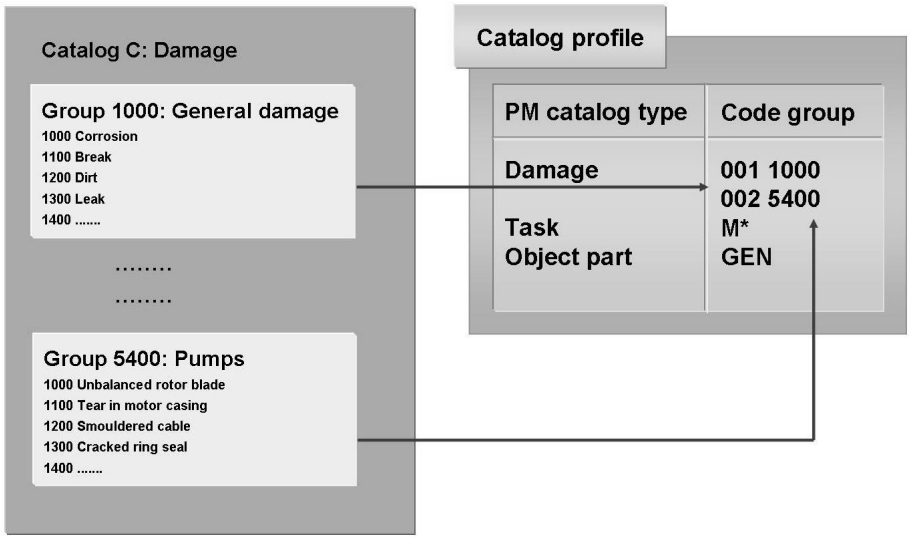

Figure 25: Catalogs and Catalog Profile

The catalog profile combines a selection of code groups from different catalogs for a particular topic (for example, findings procedure for pumps).

One or more code groups can be selected from each catalog. You can specify code groups by writing them out in full or you can use wildcards to select several code groups within an entry (for example, PUMP*).

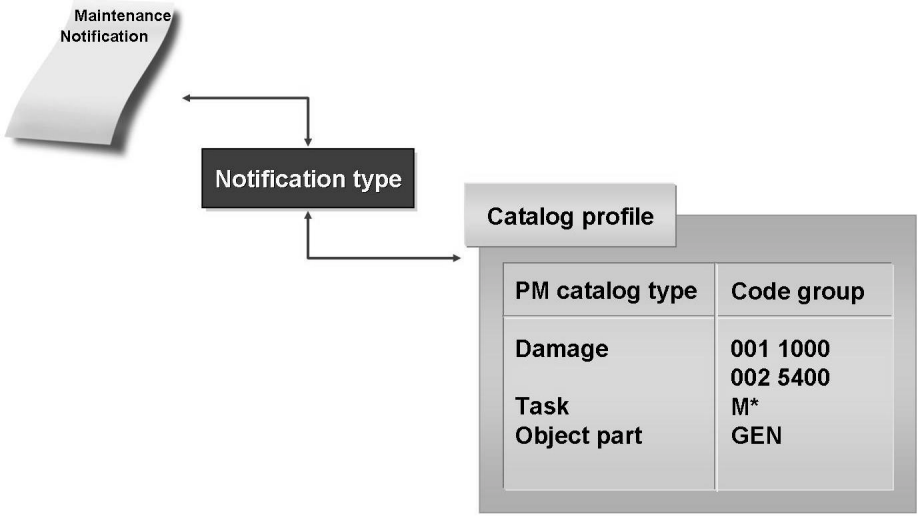

Figure 26: Assigning Catalog Profiles to Notification Types

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You can assign the catalog profile to the master record for the technical object and notification type.

If the technical object and notification type both have a catalog profile, the profile from the technical object is always read first when a notification is created, and copied if available.

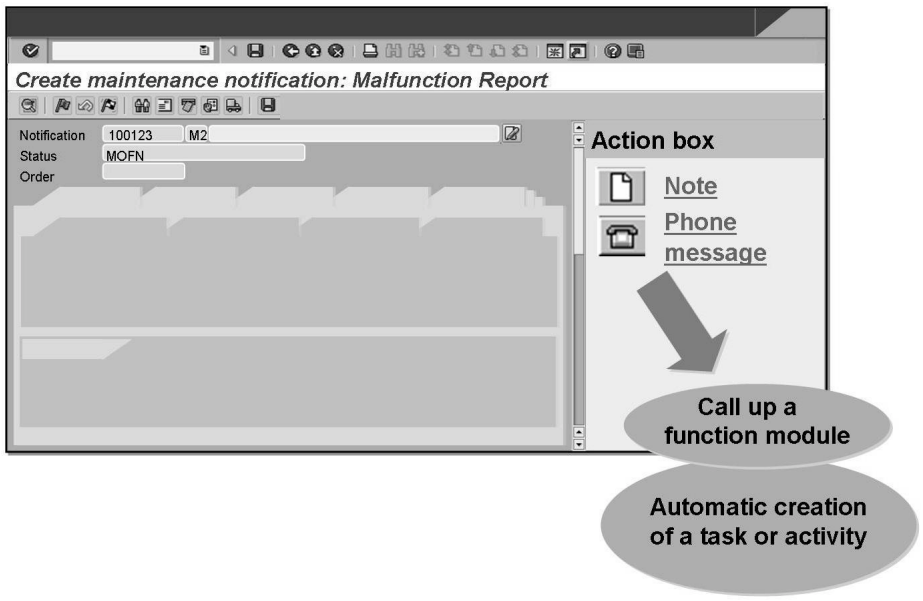

Figure 27: Action Box for Notifications

You can use the Action Box function when creating or processing a notification. The Action Box contains follow-up activities that were set as defaults for each notification type in Customizing. You can execute these follow-up activities simply by pressing the relevant pushbutton. The follow-up activity is documented either as an activity or a task in the notification header once it has been successfully executed.

The technology used for follow-up functions differs from that for the existing task-based follow-up actions as follows:

- The function is executed immediately after the follow-up function has been selected, not when the notification is saved.
- A task or activity is only created after the follow-up activity has been successfully executed.
- You can use a follow-up activity to start a workflow task.

The function group QM06 contains useful standard follow-up activities.

The function group QM10 contains copy models for creating own follow-up activities.

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Exercise 5: Catalogs and Catalog Profile

Exercise Objectives

After completing this exercise, you will be able to:

- Maintain and assign catalogs
- Define and assign catalog profiles

Business Example

In your company, a new notification type is to be created for entering requirements.

Catalogs and catalog profiles are to be used for object-specific findings.

Task:

1. Which catalogs are normally used in plant maintenance?

   Assign these to your notification type ##.

   How do you do this?

   _____

   _____

   _____

2. Code groups and codes

   Create a new code group ## with 5 codes for the damage catalog. Which codes have you created?

Code	Description

3. Catalog profile

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Create catalog profile ## that accesses your code group ## for the damage catalog, but displays all entries for the other catalogs. What entries do you make in the catalog profile?

4. Catalog profile and notification type

   Assign your catalog type ## to your catalog profile ##. Which entries do you make?

5. Create notification

   Create a notification with notification type LO## for your equipment TEQ-##. Check whether the required code groups and codes are proposed. Which notification number was assigned by the system?

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Solution 5: Catalogs and Catalog Profile

Task:

1. Which catalogs are normally used in plant maintenance?

   Assign these to your notification type ##.

   How do you do this?

   _____

   _____

   _____

   a) Select catalogs:

   SAP Menu→ Tools → Customizing → IMG → Execute Project

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Overview of Notification Type

   Select the notification type, and in the Dialog Structure double-click the line *Catalogs and Catalog Profiles*.

   Assign the following catalogs:

Field Name or Data Type	Values
Problems	C
Causes	5
Tasks	2
Object parts	B
Activities	A

2. Code groups and codes

   Create a new code group ## with 5 codes for the damage catalog. Which codes have you created?

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Code	Description

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Content → Maintain Catalogs

Choose *Edit Catalog* in the dialog box; enter and execute catalog type C code group ##.

Select *New Entries*.

Enter a short text and set to *Released* status, release data, then select the line and double-click the *Codes* folder on the left in the Dialog Structure.

Code	Description
1000	...(any)
2000	...
3000	...
4000	...
5000	...

3. Catalog profile

Create catalog profile ## that accesses your code group ## for the damage catalog, but displays all entries for the other catalogs. What entries do you make in the catalog profile?

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a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Content → Define Catalog Profile

Select *New Entries*, enter ## as the catalog profile number and assign some text to the catalog profile (for example Gr.##),

ENTER

then double-click the Catalogs / code groups folder in the Dialog Structure. Select *New Entries* and make the following entries:

Catalog	**Code group**
2	*
5	*
A	*
B	*
C	##

4. Catalog profile and notification type

Assign your catalog type ## to your catalog profile ##. Which entries do you make?

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a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Content → Change Catalogs and Catalog Profile for Notification Type

or

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Overview of Notification Type

Select the notification type, and in the Dialog Structure double-click the line *Catalogs and Catalog Profiles*.

Catalog	**Code group**
Catalog profile	`##`
Problems	`C`
Causes	`5`
Tasks	`2`
Activities	`A`
Object parts	`B`

5. Create notification

Create a notification with notification type LO## for your equipment TEQ-##. Check whether the required code groups and codes are proposed. Which notification number was assigned by the system?

a) ***SAP Menu → Plant Maintenance → Maintenance Processing → Notification → Create General***

Enter notification type ## and equipment TEQ-## and check the position of the corresponding catalog entries.

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Lesson Summary

You should now be able to:

- Define and configure catalogs
- Define catalog profiles and list allocation options
- Use additional notification functions, such as action boxes

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Lesson: Customizing Checklist (Notifications)

Lesson Overview

This lesson gives you an overview of the key Customizing settings for notifications.

Lesson Objectives

After completing this lesson, you will be able to:

- List and use key notification Customizing settings

Business Example

Once the key settings for customizing notifications have been established, the project team would like to check that they are complete and correct.

Customizing Checklist (Notification)

Notification type

- Number range
- Screen layout
- Long text control
- Object info keys
- Priority type
- Order type
- Partners
- Catalogs
- Catalog profile
- Action box
- General notification

General settings

- Condition indicator
- Transaction start values
- Field selection
- List editing
- Workflows

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Lesson Summary

You should now be able to:

- List and use key notification Customizing settings

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Unit Summary

You should now be able to:

- Record maintenance requirements using general notification and maintenance notification
- Define new notification types and assign basic parameters
- Configure tab pages and screen areas for maintenance notifications
- Define simple and enhanced views for maintenance notifications
- List further detail functions for configuring the notification interface
- Carry out the relevant Customizing settings for priorities
- Influence the field selection of a notification type
- Define a new object information key
- Define and configure catalogs
- Define catalog profiles and list allocation options
- Use additional notification functions, such as action boxes
- List and use key notification Customizing settings

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Unit 3

Planning

Unit Overview

This chapter links the chapters on *Maintenance Organization*, *Malfunction-based Maintenance* and *Planning Maintenance* from course PLM300. It also reviews the concept of planning maintenance orders and consolidates the use of maintenance orders in the planning phase along with a wealth of detailed functions with their relevant Customizing settings.

Unit Objectives

After completing this unit, you will be able to:

- Define and configure order types in plant maintenance
- Define and configure maintenance activity types
- Define and assign external processing profiles
- Define and assign control keys
- Use internal service positions
- Use the integration of notification and order
- Describe the determining of location and account assignment data
- Use the direct catalog (OCI) starting from maintenance contracts
- Describe and explain the concept of contract hierarchy
- Describe the structure of the work center and use the work center
- Explain the various capacity planning options in plant maintenance
- Display work center capacity load
- Assign people to work centers
- Explain integration with the production planning work center and describe its effects
- List and use key Customizing settings in the planning phase of maintenance orders
- Name and explain the concept of enhancing standard SAP using customer exits and business add-ins.

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Lesson: Setting Up an Order Type

Lesson Overview

This lesson provides an overview of key customizing settings for defining and configuring order types in the planning phase of plant maintenance.

Lesson Objectives

After completing this lesson, you will be able to:

- Define and configure order types in plant maintenance
- Define and configure maintenance activity types
- Define and assign external processing profiles
- Define and assign control keys

Business Example

The project team wants to define and configure its own order type. Maintenance activity types, external processing profiles and control keys should also be defined and assigned to the new order type.

Order Category, Order Type - Maintenance Activity Types

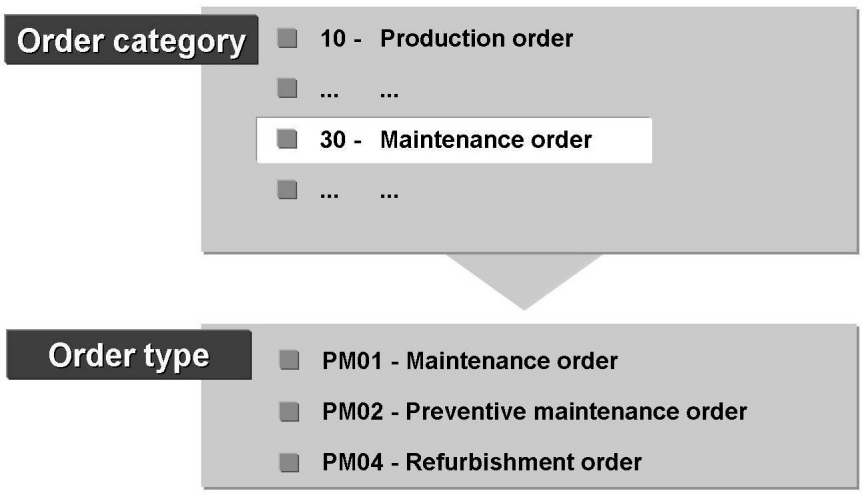

Figure 28: Order Category, Order Type

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Order category determines the application component to which an order belongs. It is usually used as a program-internal selection criterion and to all intents and purposes does not appear to users.

The order categories for the respective applications are fixed in the system.

You can freely define the order types within an order category for each application. The order type represents business segments (repair, maintenance, refurbishment, investment) that differ in the way they are processed and therefore have different system settings.

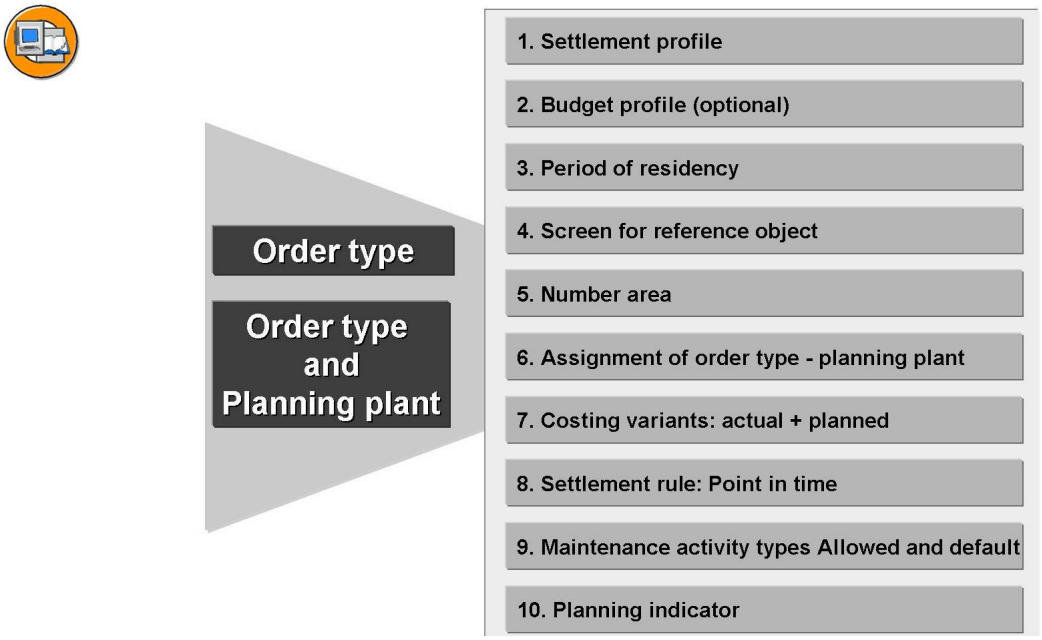

Figure 29: Setting Up an Order Type: (I)

Different order types should be used for different business situations because many system control functions depend on the order type.

A distinction is made here between parameters that depend directly on the order type and those that are assigned to a combination of order type and planning plant:

Parameters for order type:

- **Settlement profile**

  Specifies possible settlement recipients, the default receiver as well as additional parameters (for example, allocation structure).

- **Budget profile**

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The budget profile summarizes the budgeting control parameters (time frame, display, availability checks, currency conversion).

- **Residence time**

  Residence time 1: specifies the period of time (in calendar months) that must elapse between when the deletion flag is set (step 1) and when the deletion indicator is set (step 2).

  Residence time 2: specifies the period of time (in calendar months) that must elapse between when the deletion indicator is set (step 2) and the reorganization (step 3).

- **Screen for reference object**

  Specifies which input masks should be used for the reference object.

- **Number range**

  Specifies which number range interval is used for each order type.

- **Planning plant**

  Assigns order types to the maintenance planning plant.

- **Costing variants: actual + planned**

  Contains control parameters for planned and actual calculations in the order.

- **Settlement rule**

  Defines the start time for creating the settlement rule.

- **Maintenance activity type**

  Subdivides tasks within an order type and serves evaluation purposes (inspection, routine maintenance, preventive maintenance, refurbishment, cleaning, and so on).

  Not to be confused with CO activities, which are assigned to the cost center and enable work valuation during operation.

- **Planning indicator**

  The order planning indicator performs selection and statistical evaluation in the plant maintenance and customer service information systems (planned, unplanned, immediate orders).

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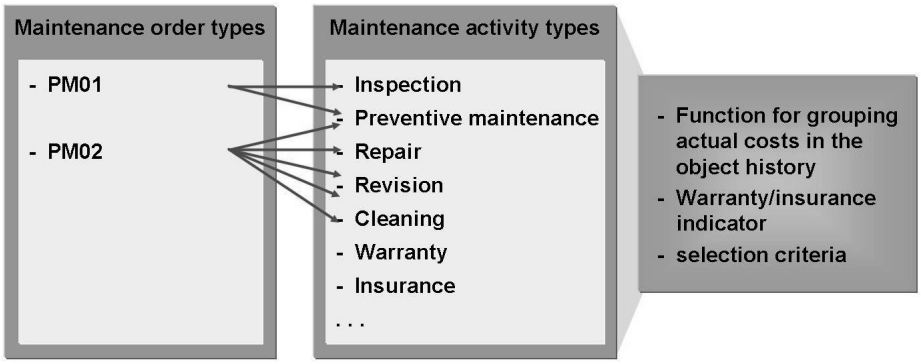

Figure 30: Maintenance Activity Types

The maintenance activity type is the key for the type of maintenance activity executed (repair, shutdown, periodic tasks and so on).

In cost evaluations (total costs, number of orders per technical object), you can classify the data using the maintenance activity type (distinction made between maintenance activities and costs).

The permitted activity types are assigned to each order type.

Setting Up an Order Type: (II) - Control Keys for Operations

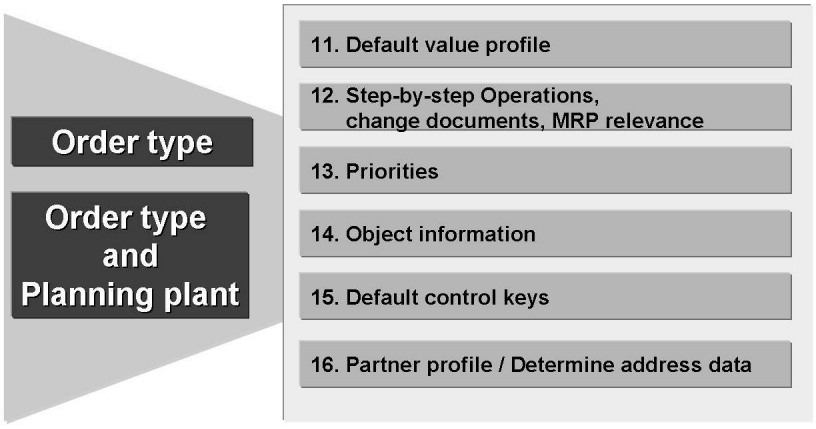

Figure 31: Setting Up an Order Type (II)

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Parameters for order type:

- **Default Value Profiles**

  Contain default values for external procurement or for general settings.

- **Step-by-step operations / change documents / MRP relevance**

  A customizing step that contains a series of settings, such as the increment for numbering operations, the creation of change documents, the MRP relevance of reservations (when creating or releasing the order), and so on.

- **Priority type with priorities**

  (as with notifications)

- **Object information**

  (as with notifications)

- **Default control key**

  A control key can be proposed by the order type.

- **Partner determination procedure/Determination of address data**

  The partner determination procedure makes contact persons available for order processing. This assignment also links to the central address management.

Special indicator for specific order types:

- To set up an order type for **integrated processing with a notification**, an additional indicator must be set in Customizing along with the corresponding notification category.
- To set up an order type for **refurbishment**, an additional indicator must be set in Customizing.

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Two profiles can be assigned:

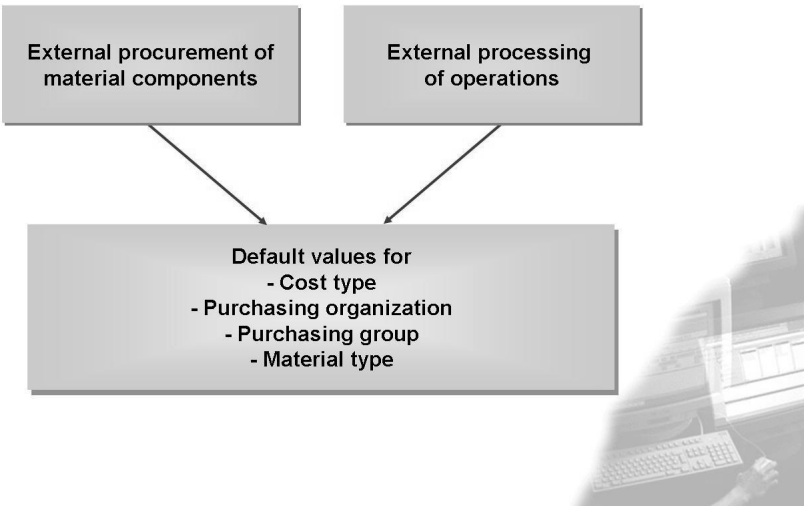

Figure 32: External Processing Profiles

During external processing, a distinction is made between the external procurement of material and the assignment of complete operations to external companies.

Since both of the procurement processes generally require different data for purchasing (different purchasing groups or different cost elements), you should define different profiles.

The profiles can be defined centrally for each order type in Customizing.

Alternatively, these settings can be set as user-specific with the user default values. The user values override the Customizing settings.

Control Keys for Operations

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Control:

- Capacity planning
- Scheduling operations
- Capacity requirement
- Costing
- Service
- Printing time tickets
- Printing confirmation slips
- Printing operations
- Completion confirmations
- External processing

The system controls the processing of individual operations using the operation control key.

You use the capacity planning indicator to ensure that the operation is scheduled and capacity load records are created for it.

By setting the costing indicator, you ensure that the operation is taken into account during costing.

You use the external processing key to define that the operation is executed by an external company.

You use the completion confirmation indicator to specify whether the operation can be confirmed and what type of completion confirmation applies.

The print parameters specify whether time tickets, confirmation slips, and so on should be printed for this operation.

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Exercise 6: Setting Up an Order Type: (I)

Exercise Objectives

After completing this exercise, you will be able to:

- Create a new order type
- Assign the required parameters to the order type

Business Example

A new order type is to be created for processing routine maintenance tasks in your company. All the parameters for the order type should be configured optimally for this purpose.

Task 1:

1. Create a new order type **LO##**. Assign the settlement profile for maintenance orders, general budget profile, and the entry mask for functional location, equipment and assembly for the reference object.

   How do you do this?

Settlement profile:	
Budget profile:	
Screen RefObject:	

2. Number Range

   Assign this order type to the number range group for maintenance orders. How do you do this?

3. Order Type and Planning Plant

   Assign this order type to the maintenance planning plant 1000. Which Customizing function do you choose for this?

4. Settlement rule:

   For your order type, the settlement rule should be mandatory at the time of order completion.

   How do you do this?

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5. Costing Variants

   Assign the costing variant for maintenance orders (for planned and actual costs) to your order type in plant 1000.

   Which Customizing function do you use?

   Which costing variant have you selected?

6. Maintenance Activity Types

   Assign permitted maintenance activity types to your order type and define a maintenance activity type as the default activity type.

   Which maintenance activity types are permitted?

   Which is the default maintenance activity type?

Task 2:

Create an Order

1. Create an order with the order type LO## for your equipment TEQ-##.
2. What reference objects are proposed?
3. Which maintenance activity type is proposed and which could you assign to the order otherwise?
4. Save the order. Which number is assigned to it?

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Solution 6: Setting Up an Order Type: (I)

Task 1:

1. Create a new order type **LO##**. Assign the settlement profile for maintenance orders, general budget profile, and the entry mask for functional location, equipment and assembly for the reference object.

   How do you do this?

Settlement profile:	
Budget profile:	
Screen RefObject:	

   a) ***SAP Menu → Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Configure Order Types

   Click *New Entries*, enter order type LO## and an appropriate short text.

Field Name or Data Type	Values
Settlement profile	`40`
Budget profile	`000001`
Screen RefObject	`0100`

2. Number Range

   Assign this order type to the number range group for maintenance orders. How do you do this?

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Configure Number Ranges***

   Choose *Maintain Groups*, select *Repair and Maintenance Orders*, double-click the order type LO## to select it, and choose *Assign element/group* to assign the order type to the group.

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3. Order Type and Planning Plant

   Assign this order type to the maintenance planning plant 1000. Which Customizing function do you choose for this?

   a) Order Type and Planning Plant

      In Customizing, select:

      Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Assign Order Types to Maintenance Plants

4. Settlement rule:

   For your order type, the settlement rule should be mandatory at the time of order completion.

   How do you do this?

   a) Settlement rule:

      Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Settlement Rule: Define Time and Creation of Distribution Rule

      Select the *Mandatory for completion* option for your order LO##.

5. Costing Variants

   Assign the costing variant for maintenance orders (for planned and actual costs) to your order type in plant 1000.

   Which Customizing function do you use?

   Which costing variant have you selected?

   a) Costing Variants

      Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Costing Data for Maintenance and Service Orders → Assign Costing Parameters and Results Analysis Keys

      Enter the costing variant PM01 as the planned and actual values.

6. Maintenance Activity Types

   Assign permitted maintenance activity types to your order type and define a maintenance activity type as the default activity type.

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Which maintenance activity types are permitted?

Which is the default maintenance activity type?

a) Maintenance Activity Types

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Maintenance Activity Type → Assign Valid Maintenance Activity Types to Maintenance Order Types

Select *New Entries*, enter order type LO## and assign the maintenance activity types already in the system, for example, 001, 002 and 003

or → ***Default Values for Maintenance Activity Type for Each Order Type***

Enter default value, for example, 001

Task 2:

Create an Order

1. Create an order with the order type LO## for your equipment TEQ-##.

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create General***

   Order type LO##

2. What reference objects are proposed?

   a) Reference objects:

   Equipment, functional location and assembly

3. Which maintenance activity type is proposed and which could you assign to the order otherwise?

   a) Default depending on the key maintained in the previous exercise, for example **001**; **002** and **003** can be assigned.

4. Save the order. Which number is assigned to it?

   a) Order number: **800xxx**

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Exercise 7: Setting Up an Order Type: (II)

Exercise Objectives

After completing this exercise, you will be able to:

- Assign the required parameters to the order type

Business Example

A new order type is to be created for processing routine maintenance tasks in your company. The parameters for the order type should be configured optimally for this purpose.

Task 1:

Default Value Profiles

1. Define the default value profile **EXS##** for external processing data and **EXM##** for external materials with the following parameters:

	EXS##	EXM##
Cost element	417000	415000
Purchasing organization	1000	1000
Purchasing group	0##	0##
Material group	007	010

2. Assign the profile EXS## for external processing and the profile EXM## for an external material for your order type LO## and for the maintenance planning plant 1000. Which Customizing function do you choose?
3. It should also be possible to select operations and replace the work center when incorporating a task list. Which checkboxes do you activate?

Task 2:

1. Supplement one of your orders as follows: Assign an internal operation and then an external operation using the control key PM02. The internal operation should also contain a non-stock material. Save the order.
2. Call the order again and determine the following data:

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PurchReq. no. External operation	
PurchReq. no. Non-stock material	
Cost element for non-stock material	
Material group for external operation	

Task 3:

Additional Settings

The following settings should also be made for your order type LO##. (Which Customizing function must you choose to make each setting?):

1. Priority type ## and the object information key ## should be valid._____
2. Group all external services and materials under one purchase requisition number.
3. Assign the partner determination procedure PM## to your order type. The role responsible is the partner function for the order header.
4. Determine the address data in the following sequence: Order → Equipment → Functional location.
5. The default value for the control key for your order type is to be *PM01*.
6. Ensure that change documents are generated.
7. Create an order with the order type LO## (any priority) for the equipment TEQ-##.
8. Change the responsible work center to MECHANIK. Save the order.
9. Call the order again, determine the following data and specify whether the data is correct, according to your Customizing settings.

Order number	
Start/end date	
Control key, internal operation	
Address data	
Action log	

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Solution 7: Setting Up an Order Type: (II)

Task 1:

Default Value Profiles

1. Define the default value profile **EXS##** for external processing data and **EXM##** for external materials with the following parameters:

	EXS##	EXM##
Cost element	417000	415000
Purchasing organization	1000	1000
Purchasing group	0##	0##
Material group	007	010

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Create Default Value Profiles for External Procurement

	EXS##	EXM##
Cost Element	`417000`	`415000`
Purchasing Organization	`1000`	`1000`
Purchasing group	`0##`	`0##`
Material group	`007`	`010`

2. Assign the profile EXS## for external processing and the profile EXM## for an external material for your order type LO## and for the maintenance planning plant 1000. Which Customizing function do you choose?

a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Default Values for Task List Data and Profile Assignments***

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3. It should also be possible to select operations and replace the work center when incorporating a task list. Which checkboxes do you activate?

   a) The same Customizing option as in the previous step.

   Activate the *Operation selection* and *Work center selection* checkboxes.

Task 2:

1. Supplement one of your orders as follows: Assign an internal operation and then an external operation using the control key PM02. The internal operation should also contain a non-stock material. Save the order.

   a) *SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change*

2. Call the order again and determine the following data:

PurchReq. no. External operation	
PurchReq. no. Non-stock material	
Cost element for non-stock material	
Material group for external operation	

   a) Call the order again and determine the following data:

PurchReq. no. External operation	**100xxxxx**
PurchReq. no. Non-stock material	**100xxxxx**
Cost element for non-stock material	**415000**
Material group for external operation	**007**

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Task 3:

Additional Settings

The following settings should also be made for your order type LO##. (Which Customizing function must you choose to make each setting?):

1. Priority type ## and the object information key ## should be valid.

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Priority

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → General Data → Define Priorities

   In the dialog box, choose *Define Priority Type for Orders* and assign the priority type ##.

   Object Information

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Object Information → Assign Object Information Keys to Order Types

2. Group all external services and materials under one purchase requisition number.

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Change Docs, Collective Purc. Req. Indicator , Operation No. Interval***

   Set the indicator for the collective purchase requisition.

3. Assign the partner determination procedure PM## to your order type. The role responsible is the partner function for the order header.

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Partner → Define Partner Determination Procedure and Partner Function***

   In the dialog box, choose *Assign Partner Determination Procedure to Order*. Assign the partner determination procedure ## to your order type and enter the order role *Responsible* (VW).

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4. Determine the address data in the following sequence: Order → Equipment → Functional location.

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Access Sequence for Determining Address Data***

5. The default value for the control key for your order type is to be *PM01*.

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Control Key → Maintain Default Values for Control Keys for Order Types***

   Click *New Entries* and make the following settings:

Planning plant	1000
Order type	LO##
Category	OKP
Z1	1
Z2	3
Z3	2

6. Ensure that change documents are generated.

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Change Docs, Collective Purc. Req. Indicator , Operation No. Interval***

   Set the indicator for the creation of change documents.

7. Create an order with the order type LO## (any priority) for the equipment TEQ-##.

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create General***

Order type	LO##
Equipment	TEQ-##

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8. Change the responsible work center to MECHANIK. Save the order.

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

      Change the work center responsible in the order's header data.

9. Call the order again, determine the following data and specify whether the data is correct, according to your Customizing settings.

Order number	
Start/end date	
Control key, internal operation	
Address data	
Action log	

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

		Correct?
Order number	**`800xxx`**	**Select**
Start/end date	**`Current date`**	**Select**
Control key, internal operation	**`PM01`**	**Select**
Address data	**`From equipment`**	**Select**
Action log	**`Change of main work center`**	**Select**

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Lesson Summary

You should now be able to:

- Define and configure order types in plant maintenance
- Define and configure maintenance activity types
- Define and assign external processing profiles
- Define and assign control keys

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Lesson: Additional Functions

Lesson Overview

This lesson presents a range of other functions for maintenance contracts.

Lesson Objectives

After completing this lesson, you will be able to:

- Use internal service positions
- Use the integration of notification and order
- Describe the determining of location and account assignment data
- Use the direct catalog (OCI) starting from maintenance contracts
- Describe and explain the concept of contract hierarchy

Business Example

The project team checks how a range of additional functions in use for contract planning at a company can find, for example, internal service master records, direct access to catalogs, contract hierarchies.

Internal Service Position

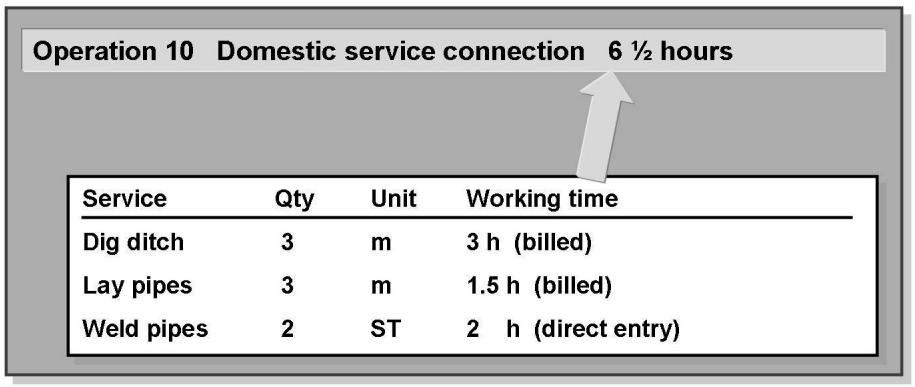

Figure 33: Internal Service Position

You can process internal operations using service masters. This is intended to standardize the planning process for internally and externally processed operations. Individual steps can be described in greater detail in a service master and the units are no longer restricted to the dimension “time”.

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The service master is maintained in the materials management and enables simple and standardized planning of work. This type of planning can be used particularly if any activities, including internal ones, need to be processed around fixed prices. There are no service measurements for each service master however, all activities are converted from hours of working time into operation level.

You must create a control key in your system for internal processing and for which the indicator *Services* has been flagged. Entering a control key means that you can enter one or more service numbers for the operation in the operation detail screen.

An entry cannot be made in the field *Work* for operations that are to be processed internally and that, in addition, allow the assignment of a service master. The system will automatically fill this field with the accumulated values from the times it has calculated, based on the services planned for the operation. You can also enter a value in the field "work" in each service line.

When using a service master, the execution factor can no longer be maintained. If a factor had already been set, the system puts it back to 1 automatically.

Integration Notification/Order

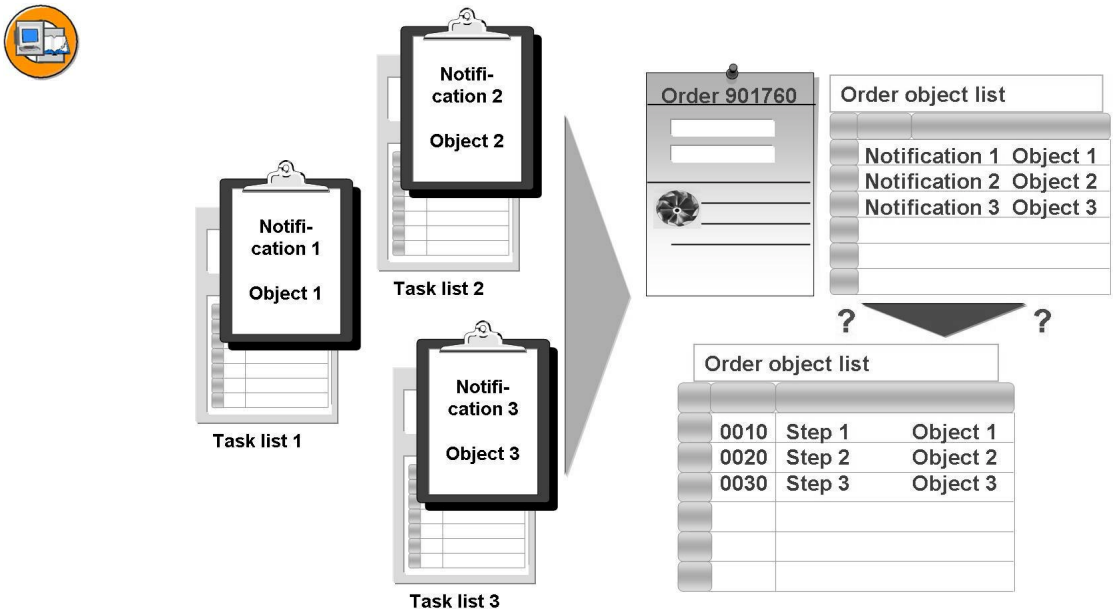

Figure 34: Integration Notification/Order

Assigning notifications to an order

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Notifications can be assigned to an existing order or one that is newly created. If the notification is assigned to a task list, then the operations of the task list can be transferred to the order object list. A prerequisite for doing this is to have a Customizing setting (notification and order integration). Four new fields are available in the order object list: functional location, equipment, notification and plan date. The notifications assigned to an order are then placed in the order's object list.

Object list entries

In the order type settings, you can specify how entries in the order object list affect the order operation list if, for example, several notifications that have a task list are grouped into one order.

You have the following options:

- Assignment of operations to object list entries inactive (default)
- Assignment of operations only for notifications with task lists called from maintenance plans
- Assignment of operations to all notifications
- Assignment of operations to all object list entries (for example, also equipments, functional locations)

Delete notifications or operations

If a notification is deleted from the order's object list, then all operations transferred by the notification's task list will also be deleted. Likewise, if all a notification's operations are deleted from an order's task list, the notification will also be removed from the object list.

Header notification

If an order is created from a single notification, it then becomes the header notification for the order (notification is attached to object list). The relationship between order and object list can be deleted. If several notifications are assigned in one existing order, then this can become the header notification (only if the contract does not have one). The subsequent assignment of a header notification can also be reversed again.

Notification long text

If an order is created from a notification, then the long text of the notification can be transferred as the order's long text (only when the order is first created). This must be activated in Customizing for all types of notification.

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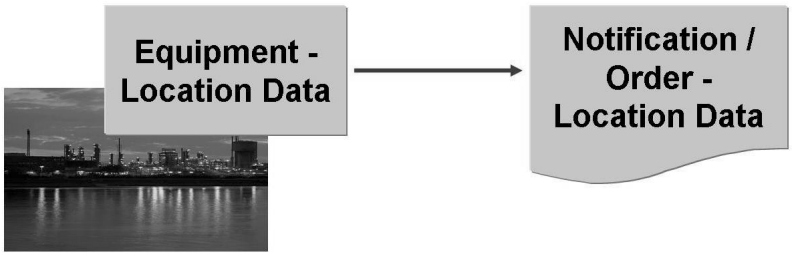
Determining Location and Account Assignment Data



- Location and account assignment data is copied when a notification or order is created
- ... can then also be changed
- Function “Update reference object data”

Figure 35: Determining Location and Account Assignment Data

When you create a notification or order, the location and account assignment data for the technical object is copied immediately from the master data into the notification or order and then updated.

It can also be changed there.

This prevents the notification or order also being changed automatically when the master data for the technical object is changed (for example, installation, dismantling, modification of equipment).

As a result, the data remains stable for evaluations in the PM-IS.

You can use the function "Update reference object data" to copy the current data for the functional location, which is the reference object for the notification or order, from the master data into the notification or order. This function is only available by clicking the **right mouse** in the object list.

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Contract and Internet Catalog

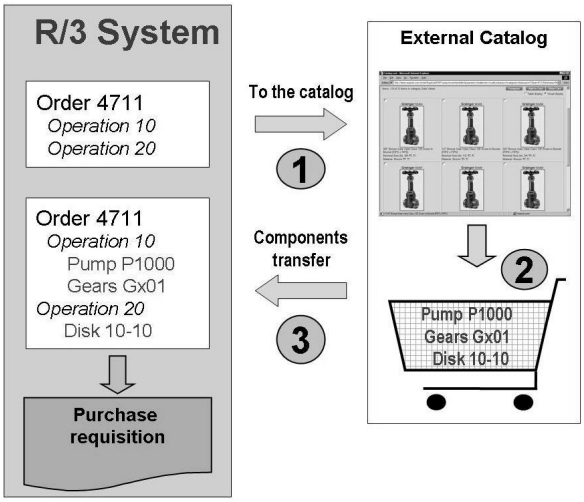

Figure 36: Direct catalog access (OCI)

To access an external spare-parts catalog based on the Internet, a direct link can be established between the order's component list and the catalog.

The link is found at **OCI interface** (**O**pen **C**atalog **I**nterface).

To do this, however, the catalog and its call structure must first be defined in Customizing.

Once a spare-part has been chosen from the supplier catalog, an item type *N (non-stock)* is created in the component list of the order.

Once a spare-part has been chosen from the supplier catalog, an item type *N (non-stock)* is created in the component list of the order.

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Order Hierarchies

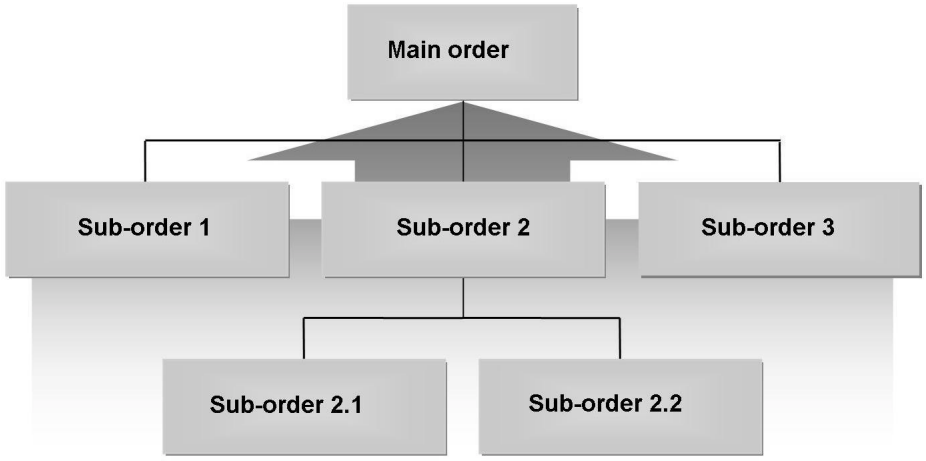

Figure 37: Order Hierarchies

If a maintenance task consists of several independent steps, whose costs should be separated, this task can be represented using an order hierarchy.

A series of sub-orders (all of which are autonomous maintenance orders) are created here for an existing main order.

The aim of an object hierarchy is to summarize costs at every level.

All the sub-orders must be completed before the main order can be completed.

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Exercise 8: Additional Functions

Exercise Objectives

After completing this exercise, you will be able to:

- Use the integration of notification and order
- Use the catalog interface for orders
- Use special types of orders
- Search for spare-parts

Business Example

A new order type is to be created for processing routine maintenance tasks in your company.

The parameters for the order type should be configured optimally for this purpose.

Task 1: Integration of Notification and Order

The responsible maintenance planner is informed that the following problems have occurred with two pumps in the biological purification plant (functional location ##-B):

- A general inspection of pump TEQ-## is required.

- An inspection of the motor should be carried out for the pump TEY-##.

1. Create a maintenance request for each pump, specifying that an inspection be carried out.

   Use the following data:

Notification type	##
Screen RefObject	TEQ-##, TEY-##
Task list	PUMP_WTG counter 1 (for TEQ-##) PUMP_WTG counter 2 (for TEY-##)

   How do you do this? Make a note of the notification numbers.

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2. As both pumps belong to the same area (biological cleaning), group both the notifications together in one order.

   Therefore, the area of the technical system (that is, the functional location) should be used for notification selection.

   Select the notifications with the functional location ##-B as a selection criterion and group the notifications into one order (order type PM01).

   How do you do this?

   How can you establish which operation is assigned to which equipment?

   What order number is assigned?

   _____

   _____

   _____

   _____

3. *Optional:*

   For organizational reasons, the pump inspection for pump TEY-## should not be carried out within the order created here.

   Delete the corresponding notification from the object list.

   Can you always do this?

   How does this affect the task list?

   Review the reference object in the order header after you have deleted the notification. Change the reference object if necessary. Complete the order.

   _____

   _____

   _____

Task 2: Catalog Interface

Catalog interface and search for replacement equipment

1. Determine which Internet catalogs are defined in the system.

   Which path do you choose?

2. Display the call structure for the catalog LinkOne_Pump.

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Which URL is specified?

3. Assign your order type ### to the *LinkOne_Pump* catalog. How do you do this?

4. You require a flat gasket for the order already created. This gasket is to be replaced during the inspection. As the gasket is not in stock in your plant, you would like to select this using your supplier's Internet catalog, creating a purchase requisition in the order.

   Assign the following spare-part to the first operations by using the Internet catalog:

Spare part	100-120 Flat gasket

   What item type is created in the component list?

Task 3: Special Order Types

Special Order Types

1. It should be possible to maintain notification and order data on the same screen. Use notification type ##.

2. Assign order type LO## to your notification type ## as the default value.

3. How can an order type be defined as a refurbishment order?

Task 4: Replacement Equipment (optional)

Replacement Equipment

1. The pump TEQ-## is badly damaged and must be replaced.

   Change the short text of operation *0010* accordingly, and delete the corresponding material component.

   As TEQ-## is a pump with assigned characteristic values, search in your order for a replacement pump with the same (assigned) characteristic values, so that you find an exact match.

   In the component list, try to find a pump that has the same characteristics or characteristic value assignment as the one to be replaced.

   How do you do this?

   Which pumps are selected?

   Why?

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Select the pump TEX-##.

What is copied to the order component list?

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Solution 8: Additional Functions

Task 1: Integration of Notification and Order

The responsible maintenance planner is informed that the following problems have occurred with two pumps in the biological purification plant (functional location ##-B):

- A general inspection of pump TEQ-## is required.

- An inspection of the motor should be carried out for the pump TEY-##.

1. Create a maintenance request for each pump, specifying that an inspection be carried out.

   Use the following data:

Notification type	##
Screen RefObject	TEQ-##, TEY-##
Task list	PUMP_WTG counter 1 (for TEQ-##) PUMP_WTG counter 2 (for TEY-##)

   How do you do this? Make a note of the notification numbers.

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification→ Create General***

Notification type	##

2. As both pumps belong to the same area (biological cleaning), group both the notifications together in one order.

   Therefore, the area of the technical system (that is, the functional location) should be used for notification selection.

   Select the notifications with the functional location ##-B as a selection criterion and group the notifications into one order (order type PM01).

   How do you do this?

   How can you establish which operation is assigned to which equipment?

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What order number is assigned?

_____

_____

_____

_____

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification→ List Editing→ Change***

Notification status	**Outstanding**
Notification type	**##**
Functional location	**##-B***

Select *Execute*.

Choose *Select all* and then *Create order*. Enter the type of order PM01 and release.

To establish which operation is assigned to which equipment, scroll to the right in the operation list.

Move the *Equipment* column next to the short text for the operation. To store this as a user-specific default: Select the list setting for the operation list (in the top right corner of the operation list), enter any variant name (for example, v1), select *Create* and *Close*.

3. *Optional:*

For organizational reasons, the pump inspection for pump TEY-## should not be carried out within the order created here.

Delete the corresponding notification from the object list.

Can you always do this?

How does this affect the task list?

Review the reference object in the order header after you have deleted the notification. Change the reference object if necessary. Complete the order.

_____

_____

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a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

Go to the *Objects* tab, select the notification line to be deleted, and choose *Delete line* (red minus sign).

If the notification to be deleted is the **header notification**, the link to the order header must firstly be **removed**. To do this, go to the *Header Data* tab and select *Remove link* next to the notification number.

Select **Change** the **Reference object in object list** (Ctl: TEQ-## new: TEY-#). Go to the tab *Objects*, delete the notification of the reference object before and declare the remaining notification as the new header notification. Mark the notification and confirm using *Define Header Notification*.

Once you have removed the **notification** from the object list, the corresponding operations (that are assigned to this equipment) are also deleted from the object list.

Task 2: Catalog Interface

Catalog interface and search for replacement equipment

1. Determine which Internet catalogs are defined in the system.

   Which path do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service→Maintenance and Service Processing→Maintenance and Service Orders→Interface for Procurement Using Catalogs (OCI)→Define Catalogs

2. Display the call structure for the catalog LinkOne_Pump.

   Which URL is specified?

   a) ***Plant Maintenance and Customer Service→Maintenance and Service Processing→Maintenance and Service Orders→Interface for Procurement Using Catalogs (OCI)→Define Catalogs***

   Select the entry *LinkOne_Pump* and double-click the folder *Call structure*.

   The URL is: *http://l1webview.mincom.com/sapocientry.asp*

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3. Assign your order type ### to the *LinkOne_Pump* catalog. How do you do this?

   a) ***Plant Maintenance → Customer Service→Maintenance and Service Processing→Maintenance and Service Orders→Interface for Procurement Using Catalogs (OCI)→Assign Catalog to Order Type***

   Select *New Entries* and enter the following values:

Order type	**LO##**
Planning plant	**1000**
Catalog ID	**LinkOne_Pump**

4. You require a flat gasket for the order already created. This gasket is to be replaced during the inspection. As the gasket is not in stock in your plant, you would like to select this using your supplier's Internet catalog, creating a purchase requisition in the order.

   Assign the following spare-part to the first operations by using the Internet catalog:

Spare part	100-120 Flat gasket

   What item type is created in the component list?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

   In the operations list, display details for the operation to which you would like to assign the spare part (double-click the number of the operation).

   On the Components tab, select *Catalog*.

   In the Component Selection view of the catalog, select the second entry *Pump Precision 100* (Display BOM).

   Select *Flat gasket 100-120* and confirm by selecting *Add item to shopping cart*. The component appears in the lower screen area in the list of components to be transferred to the maintenance order.

   Select *Check Out* (the key with the SAP Logo)

   The component is copied to the order component list (as a non-stock material).

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Task 3: Special Order Types

Special Order Types

1. It should be possible to maintain notification and order data on the same screen. Use notification type ##.

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Notifications→Define Notification and Order integration

   Assign the order type ## to your notification type ##.

2. Assign order type LO## to your notification type ## as the default value.

   a) ***Plant Maintenance and Customer Service→Maintenance and Service Processing→Notifications→ Notification Creation→Notification Types→ Assign Notification Types to Order Types***

3. How can an order type be defined as a refurbishment order?

   a) ***Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Indicate Order Types for Refurbishment Processing***

Task 4: Replacement Equipment (optional)

Replacement Equipment

1. The pump TEQ-## is badly damaged and must be replaced.

   Change the short text of operation *0010* accordingly, and delete the corresponding material component.

   As TEQ-## is a pump with assigned characteristic values, search in your order for a replacement pump with the same (assigned) characteristic values, so that you find an exact match.

   In the component list, try to find a pump that has the same characteristics or characteristic value assignment as the one to be replaced.

   How do you do this?

   Which pumps are selected?

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Why?

Select the pump TEX-##.

What is copied to the order component list?

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

At the reference object TEQ-## in the order, change the existing operation 0010 as follows: “Replace pump”. Go to the corresponding component list. Delete the existing component and select *Find Replacement Equipment*.

>> The equipment TEQ-##, class type 002 and class ED112 are automatically entered as selection criteria.

Select *Valuation* and check the characteristic value assignment.

Pieces of equipment with the same characteristic value assignment as TEQ-## are selected.

Press enter to confirm and execute the selection

Select the equipment TEX-##.

Equipment with material T-FP4## will be copied into the component list of the order.

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Lesson Summary

You should now be able to:

- Use internal service positions
- Use the integration of notification and order
- Describe the determining of location and account assignment data
- Use the direct catalog (OCI) starting from maintenance contracts
- Describe and explain the concept of contract hierarchy

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Lesson: Work Center

Lesson Overview

This lesson shows the structure and use of the work center for plant maintenance.

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the structure of the work center and use the work center

Business Example

The project team would like to present its company's own maintenance group as the plant maintenance work centers in the system.

Work center

Definition

- The work center is an organizational unit that can carry out work.
- It specifies where operations can be carried out and who do so. Machines, people, and groups of people, as well as others, can be defined as work centers.

Function

- Work center data forms the basis for: cost, capacity, and target date calculation

You use work centers to execute operations for routings and orders.

You can use work center data to help:

- Define which machines or personnel should be used for the operations
- Calculate costs, capacities and target dates for the operations

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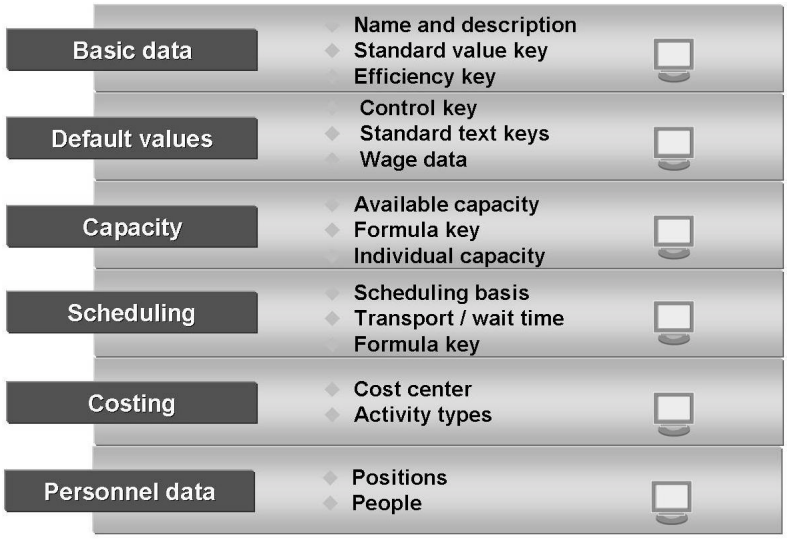

Figure 38: Work Center Data

Work center data is used for the following business functions:

- **Basic data** - contains the description, work center category (for example, Plant Maintenance), and task list usage (which routings the work center may be used for).
- **Default values** - contain, for example, a default control key.
- **Capacity** - available capacity is usually entered as the standard available capacity with the specifications - factory calendar, work start and end, level of individual capacity (= number of people) and operating time per capita. The available capacity can be restricted according to time, or can be organized in shifts differing from the standard available capacity.
- **Scheduling** - the operation dates are calculated on the basis of lead times (duration of operation), starting from the basic start or end dates.
- **Costing** - internal personnel costs are assigned on the basis of the activity types defined in Controlling. The activity types contain the assignment to an hourly rate. Activity types are assigned indirectly using a cost center, not directly to the work center.
- **Personnel data** - in addition to defining available capacity, people (= personnel numbers from Human Resources) or positions can be assigned in the work center.

Available capacity

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Definition

- Available capacity is the work that can be provided by a unit of capacity at one work center for each working day.
- Available capacity is defined using work start and finish, duration of breaks, capacity utilization, and number of individual capacity units.

Function

- Available capacity forms the basis for:

Available capacity refers to the capacity available within a specific period. Available capacity is determined by:

- Work starting and finishing times
- Length of breaks
- Capacity utilization level of the capacity units
- The number of individual capacity units that make up total capacity

In Capacity, the system saves the time worked and the daily available capacity for each work center.

Available capacity can be defined for one work center or for all work centers.

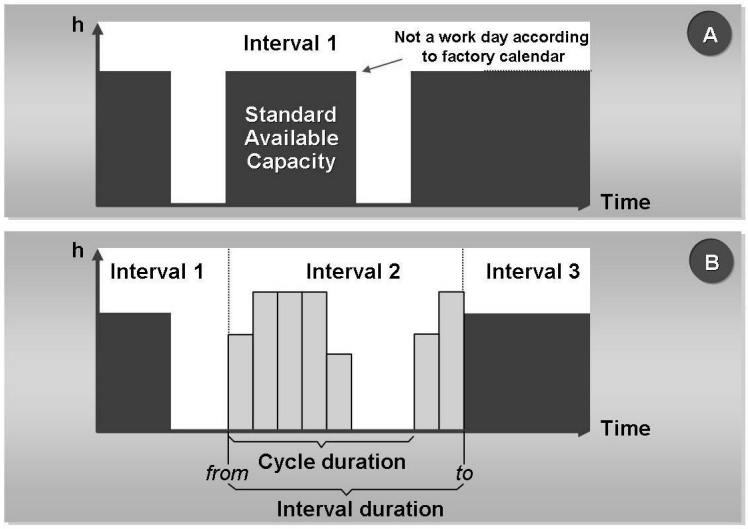

Figure 39: Available Capacity in the Work Center

The standard available capacity is valid if no interval of available capacity has been defined. The standard available capacity is defined using the shift starting and finishing times, break lengths, and number of individual capacity.

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The system uses the above data to calculate capacity unit working time. The period for which the standard available capacity is valid has no limit.

If you have specified validity periods for available capacity, these are referred to as intervals of available capacity. This is the capacity available within a specific period of validity.

To define an interval of available capacity, you can determine shift programs that will also be valid for all work centers for a fixed time period.

Start, finish, and break times are specified for work centers in a shift.

Capacity requirement

Definition

- Required work resulting from an operation for an order which should be performed by a particular work center within a fixed period of time.

Capacity requirement source:

- Repair order
- Preventive maintenance order
- Refurbishment order

Orders are the focal point of capacity planning. Orders generate requirements which in turn increase the strain on capacity of the resources needed to execute the orders.

An order's requirement is calculated using the sum of work times scheduled for the operations (field: *Resources required*).

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Exercise 9: Work Center

Exercise Objectives

After completing this exercise, you will be able to:

- Create a maintenance work center

Business Example

The company would like to present its own maintenance group as the plant maintenance work centers in the system.

Task:

1. Arbeitsplatz anlegen

   Create a new work center **T-EW##** (= electrical workshop, group ##) in plant 1000 with work center category 0005. The work center should only be used in Plant Maintenance and has no standard values. The person responsible for the work center is 0##. Use the control key for internal processing. The work center is in cost center 4300 and is allocated there using activity type 1410. Maintenance task lists have been planned as the task list usage.

   Which values do you enter?

Person responsible for the work center	
Task list usage	
Standard value key	
Control key	
Cost center	
Activity type – internal processing	
Formula key	

2. Available capacity

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Define the following available capacity for the *Person* capacity category in work center T-EW##: Employees work one shift from 7:00 a.m. to 5:00 p.m. with a one-hour break. The number of days worked is based on the factory calendar valid for plant 1000. Four technicians who are available for processing planned orders 60% of the time work in the workshop.

Which values do you enter?

Capacity category	
Processing formula Requirements	
Base unit of measure	
Factory calendar ID	
Start/finish/length of breaks	
Capacity utilization factor	
Individual capacity	

What are the resulting available capacity values?

Operating time	
Capacity	

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Solution 9: Work Center

Task:

1. Arbeitsplatz anlegen

   Create a new work center **T-EW##** (= electrical workshop, group ##) in plant 1000 with work center category 0005. The work center should only be used in Plant Maintenance and has no standard values. The person responsible for the work center is 0##. Use the control key for internal processing. The work center is in cost center 4300 and is allocated there using activity type 1410. Maintenance task lists have been planned as the task list usage.

   Which values do you enter?

Person responsible for the work center	
Task list usage	
Standard value key	
Control key	

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Cost center	
Activity type – internal processing	
Formula key	

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Environment → Work Centers → Work Center →Create***

Plant	**1000**
Work center	**T-EW##**
Work center	**005**

Data release

Object description	**electrical workshop, group ##**
Person responsible for the work center	**0##**
Task list usage	**004**
Standard value key	**SAP0**
Control key	**PM01**
Cost center	**4300**
Activity type – internal processing	**1410**
Formula key	**SAP008**

2. Available capacity

Define the following available capacity for the *Person* capacity category in work center T-EW##: Employees work one shift from 7:00 a.m. to 5:00 p.m. with a one-hour break. The number of days worked is based on the factory calendar valid for plant 1000. Four technicians who are available for processing planned orders 60% of the time work in the workshop.

Which values do you enter?

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Capacity category	
Processing formula Requirements	
Base unit of measure	
Factory calendar ID	
Start/finish/length of breaks	
Capacity utilization factor	
Individual capacity	

What are the resulting available capacity values?

Operating time	
Capacity	

a)

Capacity category	**002**
Formula key	**SAP008**
Base unit of measure	**H**
Factory calendar ID	**Leave blank**
Start/finish/length of breaks	**07:00:00 / 17:00:00 / 01:00:00**
Capacity utilization factor	**60**
Individual capacity	**4**

Available capacity data:

Operating time	**5.40 H**
Capacity	**21.60 H**

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Lesson Summary

You should now be able to:

- Describe the structure of the work center and use the work center

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Lesson: Capacity Planning

Lesson Overview

In this lesson, various ways of capacity planning, the assignment of personnel to work centers, and aspects of integration with production planning are presented.

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the various capacity planning options in plant maintenance
- Display work center capacity load
- Assign people to work centers
- Explain integration with the production planning work center and describe its effects

Business Example

The project team examines the extent to which capacity planning and personnel-related order planning can be applied in the company.

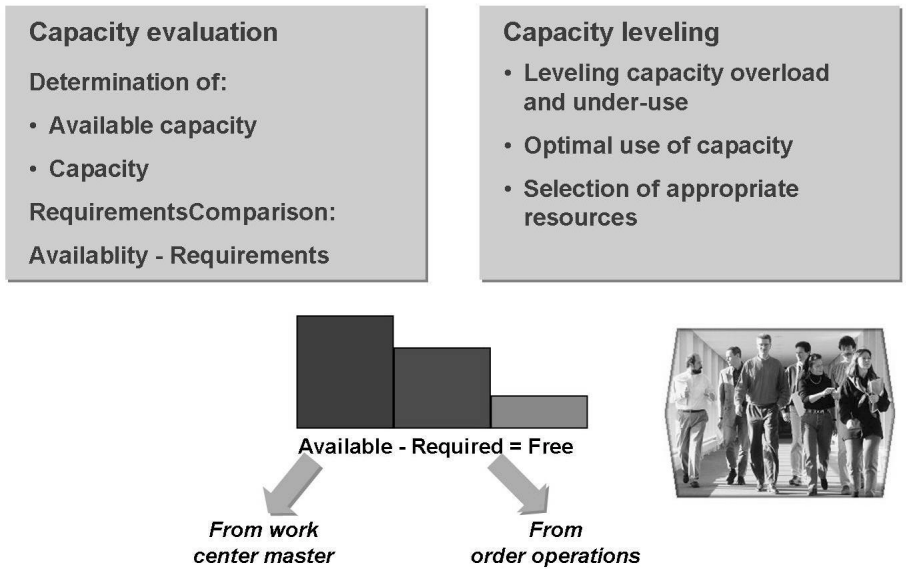

Figure 40: Areas of Capacity Planning

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Capacity planning can be divided into two areas:

- Capacity evaluation
- Capacity leveling

When evaluating the capacity situation, capacity requirements are compared to available capacity. Available capacity specifies the available capacity per workday. Capacity requirements specify the capacity required by the orders at a fixed point in time.

Capacity leveling is performed to adjust work center capacity overload or under-use. It also helps to optimize the use of labor and machinery and to select appropriate resources.

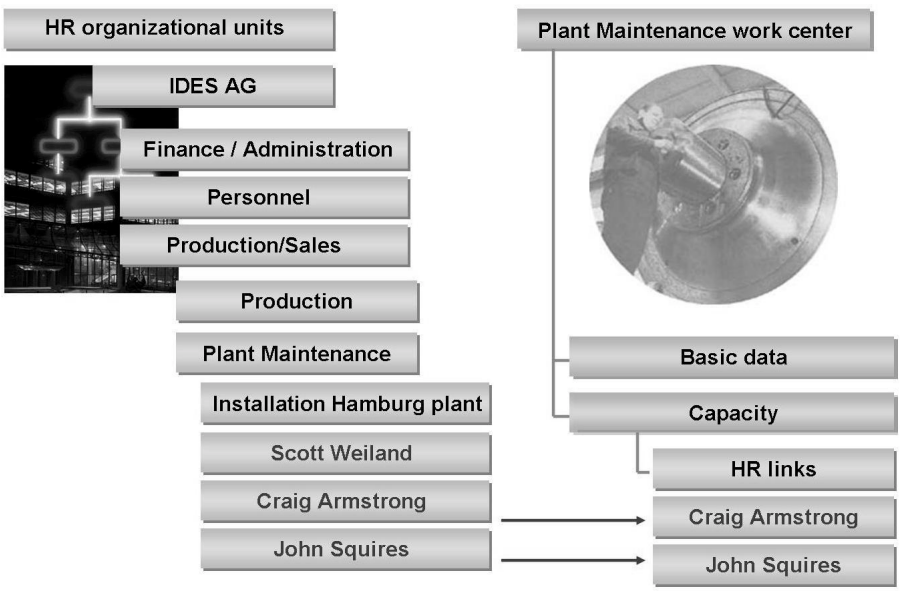

Figure 41: Assignment of Personnel

You can only assign people, qualifications and positions to work centers if you use Human Resources (HR).

When using HR, individuals who are stored in HR in a personnel master record with a personnel number can be assigned to a maintenance work center.

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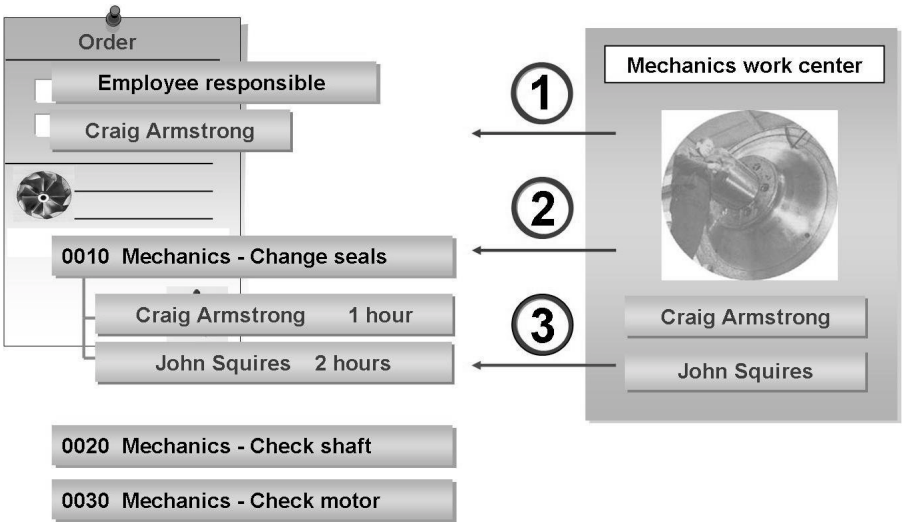

Figure 42: Assigning the Employee to an Order

When people are assigned to the maintenance work center, they can be assigned to different places in the maintenance order:

1. Assignment of employee responsible in the order header

   To do this, the order type must have a partner determination procedure with the *Person Responsible (PR)* function and the field in the order header must be activated

2. Assignment of employee to operation
3. Assignment of several employees to the operation's requirements assignment

   Splits can be generated manually or automatically here, meaning that the work in the operation is divided among several people.

Automatic split generation:

Several partners are assigned to the order (from the partner determination procedure for the order type). The work to be done is distributed automatically and equally among these partners (partner type person). This takes place in the form of automatically generated requirement assignments (splits) for the operation.

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A split partner role must be assigned to the order type before automatic split generation can take place.

Hint: Automatic generation of splits is only possible once when the order is created. If you subsequently change the order, the split is not automatically changed.

A split is generated only once for operations which are subsequently added.

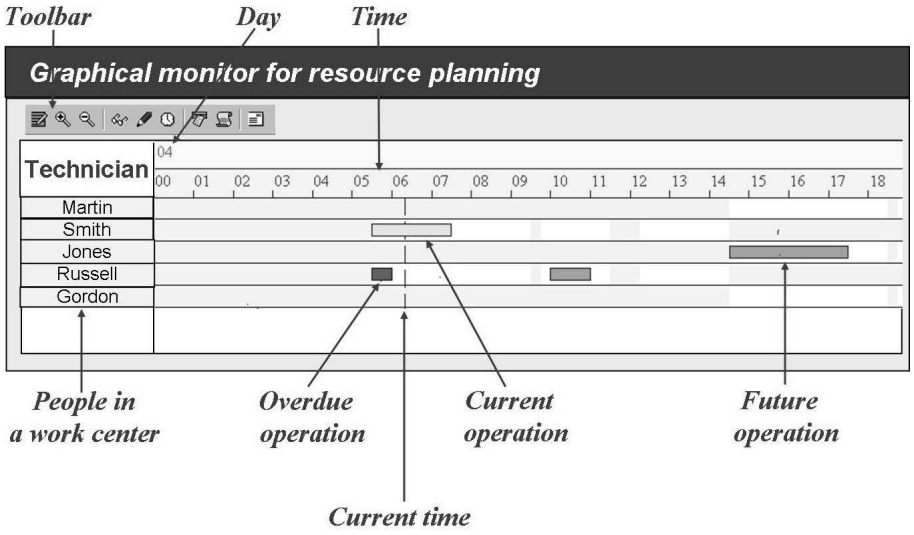

Figure 43: Graphical Monitor

You use the **graphical monitor** to display an updated overview of the work that has been assigned to **individuals in a work center**. The graphical monitor is automatically updated at fixed intervals of time. You thus have a current overview of several people and, when required, of several orders at the same time.

The capacity load records for all technicians assigned to a work center are displayed.

The following **HR data** is integrated:

- Shift schedules
- Presence and absence (these are depicted differently from work times)
- On call availability

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A prerequisite for the use of the graphical monitor is that personnel have been assigned to the specified work center using the *Time Management (PT)* application component.

Hint: The graphical monitor only shows capacity load for people who have been assigned to the order in the form of a capacity split (*Requirements assignment* tab page in the order).

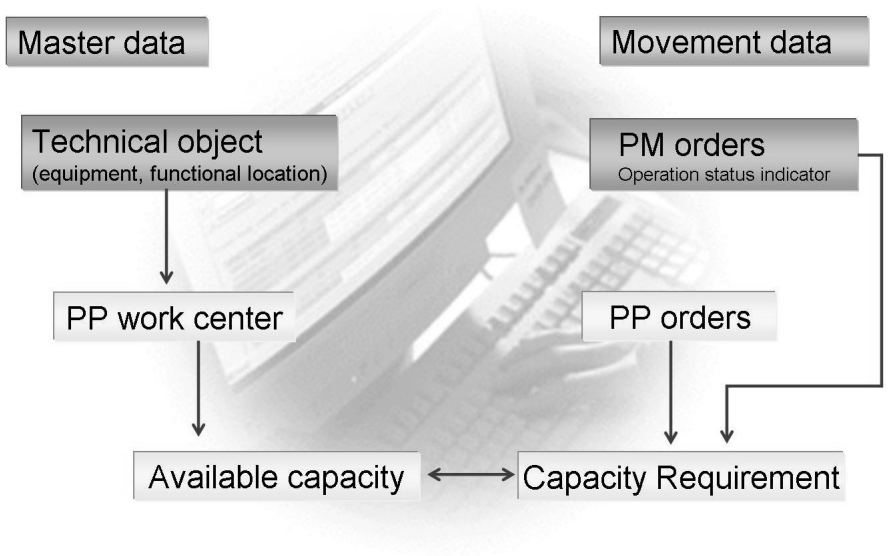

Figure 44: PM-PP Integration

If a maintenance order has been written for a machine being used as a production work center, production planners should be able to see all pending maintenance orders and the production orders for this work center on their planning boards.

To display maintenance orders for a production work center, the number of the **PP work center** must first be entered in the technical object's **location data**.

The maintenance order must also have a **system condition** at the header level.

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Exercise 10: Capacity Planning

Exercise Objectives

After completing this exercise, you will be able to:

- Plan and monitor available capacity and capacity requirements

Business Example

The project team examines the use of capacity planning within the framework of PM implementation

Task 1:

Create an Order

Create an order with order type LO## for your equipment TEQ-##. The task list PUMP_WTG with group counter 7 should be executed 4 times by your work center T-EW##. In each case, two technicians should perform the work.

1. How do you incorporate the general task list?
2. What is the easiest way of replacing the work center in the general task list with your own work center?
3. How can you execute the general task list 4 times?
4. What do you have to do to use 2 technicians each time?
5. Should you save the order? Which number do you receive?

Task 2:

Capacity Load

1. Get the capacity load standard evaluation for your work center T-EW##. Which menu path do you choose?
2. Which entries are displayed with requirements?

Week	Required	Available	Load percentage	Free capacity	Unit

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Solution 10: Capacity Planning

Task 1:

Create an Order

Create an order with order type LO## for your equipment TEQ-##. The task list PUMP_WTG with group counter 7 should be executed 4 times by your work center T-EW##. In each case, two technicians should perform the work.

1. How do you incorporate the general task list?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create (General)***

   Order type LO##

   Extras → Task list selection → Direct entry

Task list	`Pump_Mtce`
Group counter	`7`

2. What is the easiest way of replacing the work center in the general task list with your own work center?

   a) Changes the work center or operation selection can either be made in the **user profile** of an SAP user:

   Extras → Settings → Default Values

   Control tab, Task list transfer group box;

   Operation select. and *Work cntr. selection* checkboxes

   or

   saved as a **setting for the order type**:

   In Customizing:

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Default Values for Task List Data and Profile Assignment

   Note: User-specified settings have priority!

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3. How can you execute the general task list 4 times?

   a) In the operation selection window, set the task list factor on 4.

4. What do you have to do to use 2 technicians each time?

   a) Enter 2 for all operations in the No. (= number of people) field.

5. Should you save the order? Which number do you receive?

   a) **800xxx**

Task 2:

Capacity Load

1. Get the capacity load standard evaluation for your work center T-EW##. Which menu path do you choose?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Capacity Planning → Reporting → Work Center View → Load***

2. Which entries are displayed with requirements?

Week	Required	Available	Load percentage	Free capacity	Unit

a)

Week	*Re-quired*	*Avail-able*	*Load percentage*	*Free capacity*	*Unit*
e.g., 11.2005	`22.00`	`108.00`	`20 %`	`86.00`	`H`
e.g., 12.2005	`0.00`	`108.00`	`0 %`	`108.00`	`H`
e.g., 13.2005	`0.00`	`108.00`	`0 %`	`108.00`	`H`

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Lesson Summary

You should now be able to:

- Explain the various capacity planning options in plant maintenance
- Display work center capacity load
- Assign people to work centers
- Explain integration with the production planning work center and describe its effects

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Lesson: Customizing Checklist (Planning)

Lesson Overview

This lesson gives you an overview of the key Customizing settings for order types.

Lesson Objectives

After completing this lesson, you will be able to:

- List and use key Customizing settings in the planning phase of maintenance orders
- Name and explain the concept of enhancing standard SAP using customer exits and business add-ins.

Business Example

After the substantial changes to the order customizing for the planning phase of orders are met, the project team would like to examine these for completeness and correctness.

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Customizing Checklists

Order type

- Settlement profile
- Budget profile
- Residence time
- Screen for reference object
- Number range
- Maintenance planning plant
- Costing Variants
- Settlement rule
- Maintenance activity type
- Planning indicator
- Default Value Profiles
- Step-by-step operations, change documents, MRP relevance
- Priorities
- Object info keys
- Default control key
- Partners, Addresses
- Integration of Notification and Order
- OCI interface (internet catalog)

Special Order Types

- Order combined with notification
- Refurbishment order

Customer Exits and Business Add-Ins (BADIs)

Customer exit definition: Customer exits allow customers to add customer-specific functions to enhance the standard SAP applications within the framework of the SAP enhancement concept. Customer exits do not contain functions themselves - they are program exits that enable customer-specific programs to be incorporated.

Customer exits have two main advantages:

- Customer exits do not affect the SAP standard source code
- Customer exits are not effected by software updates

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Business Add-In definition: Like customer exits, business add-ins are defined program exits. Unlike customer exits, which are based on a two-layer (SAP, customer) system landscape, business add-ins are based on a multi-layer system landscape (for example, SAP, country version, Industry Solutions, partners, customer). You can define and implement business add-ins at any level of the system landscape.

For further information about business add-ins, use transaction SE19 and then the menu path *Help > Application help*.

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Lesson Summary

You should now be able to:

- List and use key Customizing settings in the planning phase of maintenance orders
- Name and explain the concept of enhancing standard SAP using customer exits and business add-ins.

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Unit Summary

You should now be able to:

- Define and configure order types in plant maintenance
- Define and configure maintenance activity types
- Define and assign external processing profiles
- Define and assign control keys
- Use internal service positions
- Use the integration of notification and order
- Describe the determining of location and account assignment data
- Use the direct catalog (OCI) starting from maintenance contracts
- Describe and explain the concept of contract hierarchy
- Describe the structure of the work center and use the work center
- Explain the various capacity planning options in plant maintenance
- Display work center capacity load
- Assign people to work centers
- Explain integration with the production planning work center and describe its effects
- List and use key Customizing settings in the planning phase of maintenance orders
- Name and explain the concept of enhancing standard SAP using customer exits and business add-ins.

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Unit 4

Scheduling

Unit Overview

This chapter links the chapter on *Planning Maintenance* from course PLM300. It also reviews the concept of controlling and then consolidates the use of maintenance orders in the controlling phase along with a wealth of detailed functions with their relevant Customizing settings.

In addition, the concept of permits and workflows regarding maintenance orders will be presented.

Unit Objectives

After completing this unit, you will be able to:

- Run a material availability check
- Set the parameters necessary for a material availability check
- Schedule maintenance orders
- Set the relevant scheduling parameters
- Use and schedule relationships in maintenance orders
- Use technical permits
- Use process-oriented permits
- Make all the necessary permit Customizing settings
- Describe the fundamental terms in workflows
- Explain the concept of CATS
- Describe examples for using workflows in the maintenance environment
- Carry out and print the print control settings
- Carry out necessary Customizing settings for printing notifications or orders.
- List and use key Customizing settings in the controlling phase of maintenance orders

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Lesson: Material availability check

Lesson Overview

This lesson shows how the material availability check is run for plant maintenance orders, and which Customizing settings are required.

Lesson Objectives

After completing this lesson, you will be able to:

- Run a material availability check
- Set the parameters necessary for a material availability check

Business Example

The goal of the controlling phase is to place an order in process. To do this, the material situation for the order must be checked. The project team checks which Customizing settings for checking material availability for the order type should be used.

Material availability check

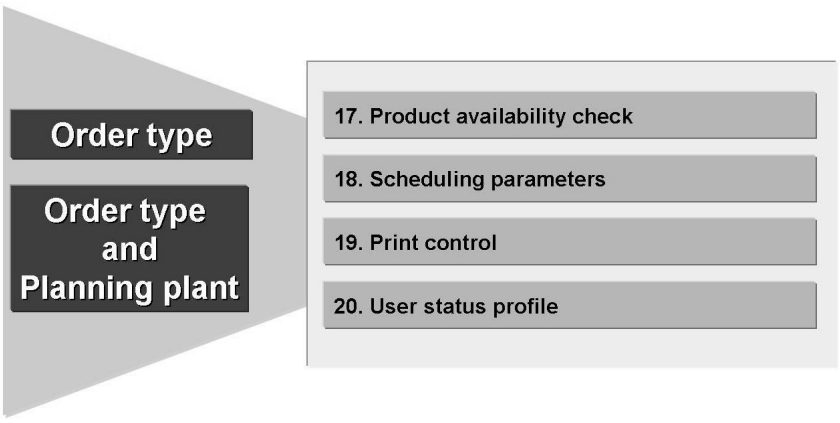

Figure 45: Set Up Order Type (III)

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The following parameters should be set for order type or order type and planning plant:

- **Material availability check**

  Settings for order type and material master determine whether a material availability check is possible, how it should be run, and how shortfalls should be dealt with.

- **Scheduling parameters**

  Determine how order operation start and finish dates should be calculated.

- **Printer management**

  The available shop papers, printing programs, and formulas per order type are determined here. User settings and print diversion can also be activated.

- **User status profile**

  The work process flow of the order can be controlled using user status profiles.

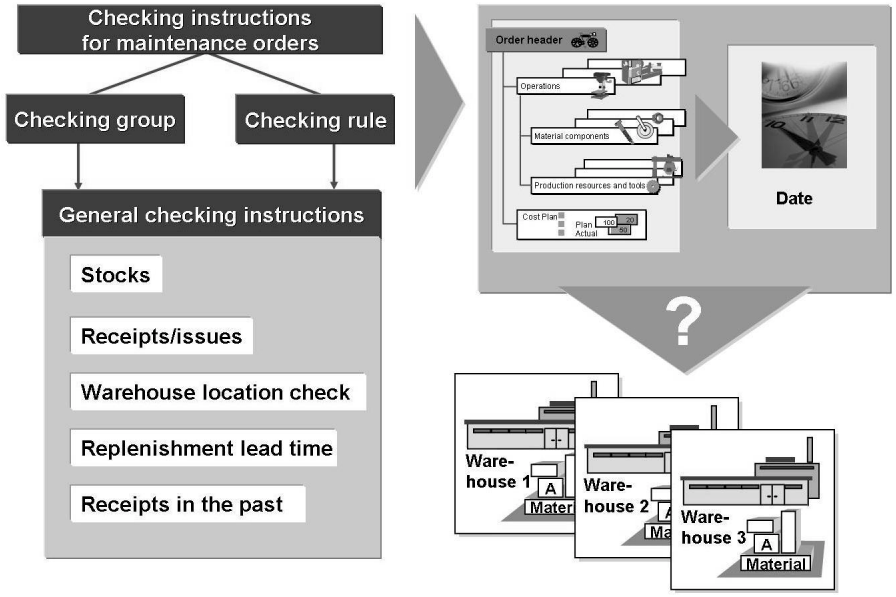

Figure 46: Material Availability Check

Availability checks are controlled by checking instructions consisting of **checking rules** and **checking groups**.

A check can be made in an open order or in an order release.

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The availability check leads to a *shortfall (FMAT)* status being generated when there is a deficit in the warehouse. You can determine whether or not an order is allowed to be released despite shortfalls.

Availability checks can be set to generate a dynamic check of all goods received/goods issued (order requirements, orders, stock in transfer, safety stock, etc.).

These settings are determined for the combination of checking group and checking rule.

The checking rules are then assigned to the order type. The checking group is recorded in the material master.

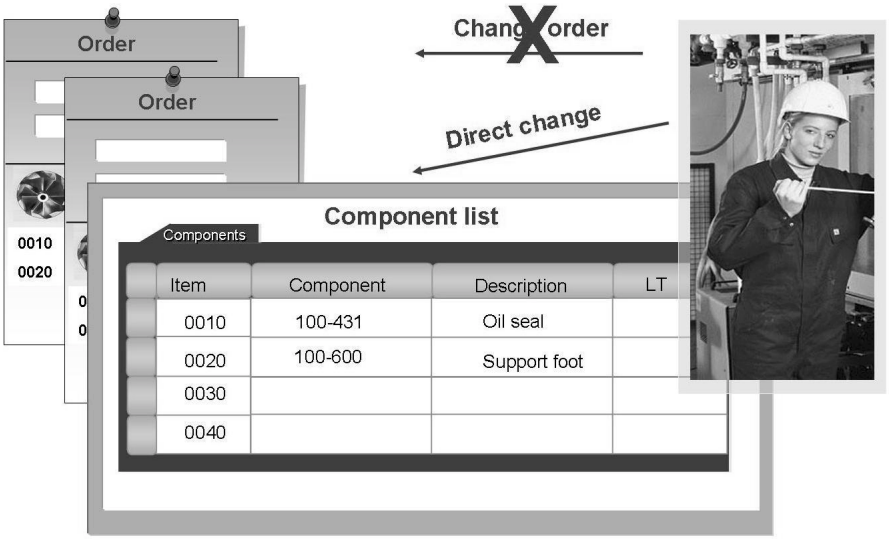

Figure 47: Component List: Removed from Storage

The component list of an IH order can be changed using its own transaction (IW3K). Supplements and changes can thus also be made by employees who have no change authorization for the order.

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Exercise 11: Material Availability Check

Exercise Objectives

After completing this exercise, you will be able to:

- Set the parameters necessary for a material availability check

Business Example

Company order controlling should run material availability checks.

Task:

1. Define availability check

   Assign rule **PM** to your order type in Plant 1000 for availability operations 1 and 2 to check material availability. When parts are missing, the user should decide whether or not to release the order in operation 2.

   PRT and capacity availability should not be checked.

   What do the following mean

   Availability function 1:_____

   Availability function 2:_____

   What do you enter here?

   _____

   _____

2. Run availability check

   Assign 1 piece each of warehouse materials 100-100 and 401-400 to one of your orders for reference object TEQ## and display the scope of the check.

Material	open quantity	Quantity units	confirmed quantity
100-100			
401-400			

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Solution 11: Material Availability Check

Task:

1. Define availability check

   Assign rule **PM** to your order type in Plant 1000 for availability operations 1 and 2 to check material availability. When parts are missing, the user should decide whether or not to release the order in operation 2.

   PRT and capacity availability should not be checked.

   What do the following mean

   Availability function 1:_____

   Availability function 2:_____

   What do you enter here?

   _____

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a) ***SAP Menu → Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Availability Check for Materials, PRTs and Capacities → Define Inspection Control

Select *New Entries*.

Plant 1000, order type LO##, **availability function 1** (= check for open order)

Material availability area

Activate *Check material availability when saving order*

PM*Checking rule*

PRT availability area

Set *No check*

Select *New Entries*

Plant 1000, order type LO##, **Availability function 2** (= check availability of released order)

Material availability area

Check material availability when saving order: **activate**

Checking rule: **PM**

Release material: **1**

PRT availability area

Set *No check*

2. Run availability check

Assign 1 piece each of warehouse materials 100-100 and 401-400 to one of your orders for reference object TEQ## and display the scope of the check.

Continued on next page

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Material	open quantity	Quantity units	confirmed quantity
100-100			
401-400			

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

Select *Components* tab page, and enter materials.

Material	open quantity	Quantity units	confirmed quantity
100-100	1	Pc	1
401-400	1	Pc	1

Select items and click *Check material availability*

Select *Continue*.

Select *Continue*.

Hint: Click *Inspection Scope* to display the scope of the check.

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Lesson Summary

You should now be able to:

- Run a material availability check
- Set the parameters necessary for a material availability check

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Lesson: Scheduling

Lesson Overview

This lesson demonstrates the scheduling of maintenance orders and the relevant Customizing settings.

Lesson Objectives

After completing this lesson, you will be able to:

- Schedule maintenance orders
- Set the relevant scheduling parameters
- Use and schedule relationships in maintenance orders

Business Example

The goal of the controlling phase is to place an order in process. The dates must be checked.

Using the Customizing settings the project team is able to check how the scheduling of the maintenance order can be fixed and optimized.

Scheduling

Calculation of start and end dates for orders and operations

Settings for planning plant / order type:

- **Default scheduling type**
- **Adjust basic dates**
- **Automatic scheduling**
- **Display of scheduling log**
- **Scheduling including breaks**
- **Order shift**

Figure 48: Scheduling

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During **scheduling**, the lead times for the operations (Duration field) are totaled and then either added to the basic start date (**forwards scheduling**) or subtracted from the basic end date (**backwards scheduling**). The start or end dates calculated in this way can deviate from the basic dates.

For each order type, you can define the standard **scheduling type**. However, this can be changed on the header data screen for the service order. Each scheduling type refers to a scheduling method, for example, forward scheduling, backward scheduling, current date scheduling, no scheduling.

Adjust basic dates means that the date entries scheduled always have priority over the basic dates.

Automatic scheduling means that the system always schedules the order when you save it.

Scheduling including breaks means that the break times from the work center masters are taken into consideration. If the indicator is not set, the total break time is distributed proportionally. The scheduling including breaks can only be used in connection with a shift sequence with scheduled breaks (in maintenance this is not usual).

Order shift means that if you change the basic dates when an order is being executed, the system always uses the new basic dates for scheduling purposes, rather than the actual dates entered so far.

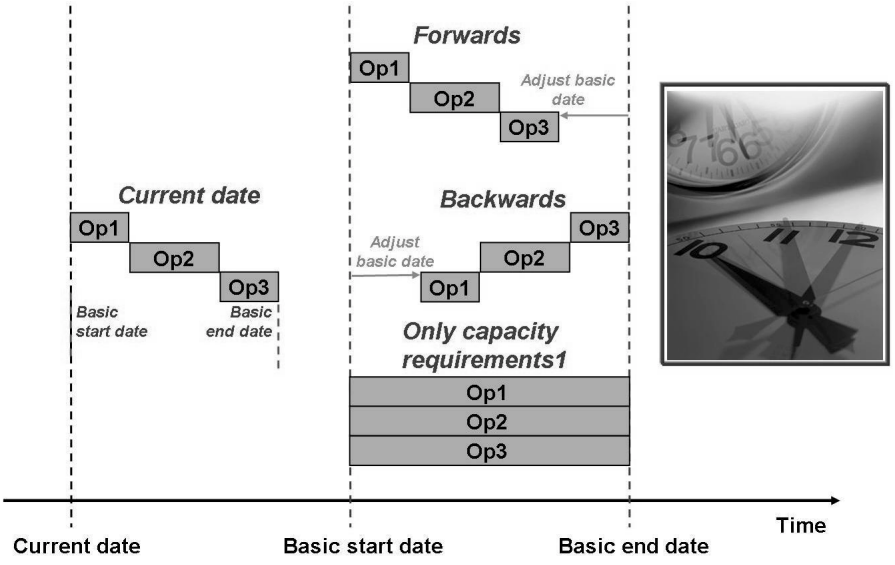

Figure 49: Scheduling Types

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This diagram shows how the system determines the dates for the three operations in an order (Op1 to Op3) dependent on the scheduling type.

For the scheduling type **Only capacity requirements**, the capacity requirements are distributed equally across the period between basic start and basic end date.

The **basic dates are adjusted** if necessary, depending on the setting for the order type. This means that the start date for the first operation is copied as the basic start date of the order and the end date for the last operation copied as the basic end date of the order.

For each scheduling type, you can set whether the **time** can also be entered for the basic dates, in addition to the date.

The **capacity loads** already available are considered during capacity scheduling. Only those work centers that have the indicator *Relevant for Capacity Scheduling* are involved in capacity scheduling. For each operation to be scheduled, the system checks whether sufficient free capacity is available for it on the date calculated. If sufficient capacity is available, the operation is scheduled. If sufficient capacity is not available, the operation is shifted to a date when capacity problems do not arise.

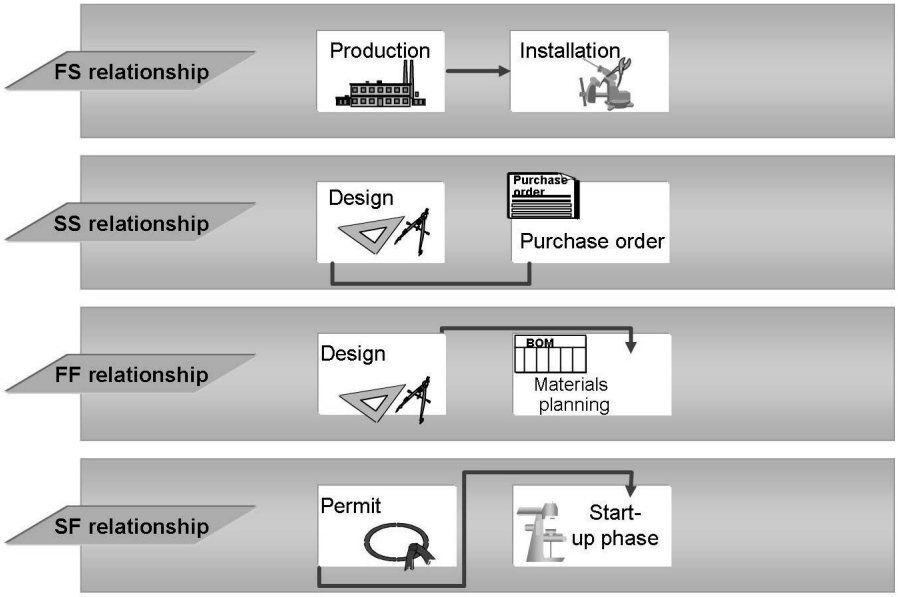

Figure 50: Relationships - Overview

A relationship describes time-based dependencies between two operations in a maintenance order. For example, a particular operation can only start once another operation has been completed, or an operation cannot be completed before another operation has been completed.

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Relationships are determined by two factors:

- Type
- Time period

There are four types of relationship:

- Finish -> Start - The end of one operation is linked to the start of the next operation.
- Start - Start - The start of one operation is linked to the start of the next operation.
- Finish - Finish - The end of one operation is linked to the end of the next operation.
- Start -> Finish - The start of one operation is linked to the end of the next operation.

The time period is the time between two operations that are linked by a relationship. For example, the waiting times between two working stages can be represented.

If only some operations in an order are fully linked by relationships, the missing relationships can be regenerated using the ***Generate relationships*** function for an order. FS relationships are automatically generated here.

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Exercise 12: Scheduling

Exercise Objectives

After completing this exercise, you will be able to:

- Schedule maintenance orders
- Set the relevant scheduling parameters
- Use and schedule relationships in maintenance orders

Business Example

The goal of the controlling phase is to place an order in process.

The dates must be checked.

Using the Customizing settings the project team is able to check how the scheduling of the maintenance order can be fixed and optimized.

Task 1:

Defining Scheduling

1. Set up scheduling for the order type LO## in plant 1000 so that forward scheduling is performed, the dates are calculated automatically, and the basic dates are not adjusted.

   Which Customizing function do you use?

   _____

   Which entries do you make?

Plant	
Order type	
Production scheduler	
Adjust dates	
Production scheduler	
Scheduling type	
Automatic scheduling	

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Task 2:

Performing Scheduling

1. Create a new order with order type LO## for your equipment TEQ-##. Create four operations with your work center T-ME## with standard times (12-8-10-2 H).

   Perform scheduling and check the following data:

Header	Start: Basic/Scheduled	End: Basic/Scheduled
Operations	Start	End
0010		
0020		
0030		
0040		

Task 3:

1. Relationships: Entering a Profile

   Add the general PM standard profile **PM NETWORK** for graphical display to your assigned profiles. Which Customizing function do you choose?

2. Creating Maintenance Orders

   A technical system has to be moved. Your work center T-ME## has been given the task of setting up scaffolding and connecting your pump TEQ-##.

   Create a maintenance order with the order type PM01. Plan six operations (0010 - 0060) with standard times (work) and materials.

3. Scheduling Dependencies

   What options do you have for defining scheduling dependencies?

4. Relationships and Operation Network

   Maintain the following relationships for your operations:

   0020 and 0030 follow 0010,

   0040 follows 0020

   0050 follows 0030

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0060 follows 0040 and 0050

How do you do this?

_____

_____

_____

Your operation 0010 should be performed after the operation 0010 of an order which you already created earlier. How do you do this?

_____

_____

_____

5. Net structure and Gantt chart

Display your scheduling dependencies as a net structure and a Gantt chart.

How do you do this?

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Solution 12: Scheduling

Task 1:

Defining Scheduling

1. Set up scheduling for the order type LO## in plant 1000 so that forward scheduling is performed, the dates are calculated automatically, and the basic dates are not adjusted.

   Which Customizing function do you use?

   _____

   Which entries do you make?

Plant	
Order type	
Production scheduler	
Adjust dates	

Continued on next page

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Production scheduler	
Scheduling type	
Automatic scheduling	

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Scheduling → Set Scheduling Parameters

Plant	`1000`
Order type	`LO##`
Production scheduler	`*`
Adjust dates	`Do not adjust basic dates, dep. requirements to operation dates`
Scheduling type	`Forwards`
Automatic scheduling	`Select`

Task 2:

Performing Scheduling

1. Create a new order with order type LO## for your equipment TEQ-##. Create four operations with your work center T-ME## with standard times (12-8-10-2 H).

   Perform scheduling and check the following data:

Header	**Start: Basic/Scheduled**	**End: Basic/Scheduled**
Operations	Start	End
0010		

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Header	Start: Basic/Scheduled	End: Basic/Scheduled
0020		
0030		
0040		

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create (General)***

Order type LO##

Schedule operations and select *Schedule*.

Hint: You can see the scheduling data of the order type under the order header at *Display Other Scheduling Data*.

Task 3:

1. Relationships: Entering a Profile

Add the general PM standard profile **PM NETWORK** for graphical display to your assigned profiles. Which Customizing function do you choose?

a) ***SAP Menu → Tools → Customizing → IMG → Execute Project***. Select *Display SAP Reference IMG* .

Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Default Values for Task List Data and Profile Assignment

Mark your order type and assign the following profile:

Field Name or Data Type	Values
Profile - Plant Maintenance	`0000001`

2. Creating Maintenance Orders

A technical system has to be moved. Your work center T-ME## has been given the task of setting up scaffolding and connecting your pump TEQ-##.

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Create a maintenance order with the order type PM01. Plan six operations (0010 - 0060) with standard times (work) and materials.

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create (General)***

Order type LO##

3. Scheduling Dependencies

What options do you have for defining scheduling dependencies?

a)

FS relationship
SS relationship
FF relationship
SF relationship

4. Relationships and Operation Network

Maintain the following relationships for your operations:

0020 and 0030 follow 0010,

0040 follows 0020

0050 follows 0030

0060 follows 0040 and 0050

How do you do this?

_____

_____

_____

Your operation 0010 should be performed after the operation 0010 of an order which you already created earlier. How do you do this?

_____

_____

Continued on next page

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a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

Go to → Graphic → Network Structure

The operations can be linked to one another by using *Connect*:

Go to the right half of the operation 0010 and lead to the left half of operation 0020 (the end of operation 0010 is linked to the beginning of operation 0020) and so on.

Linking to an external order:

Go to the operations list and mark the operation 0010. Press *Schedule*.

Go to the tab Relationships.

Enter the order number, operation number 0010 and FS (= FS relationship).

5. Net structure and Gantt chart

Display your scheduling dependencies as a net structure and a Gantt chart.

How do you do this?

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

Go to → Graphic → Network Structure

Or

Go to → Graphic → Gantt Chart

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Lesson Summary

You should now be able to:

- Schedule maintenance orders
- Set the relevant scheduling parameters
- Use and schedule relationships in maintenance orders

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Lesson: Permits

Lesson Overview

This lesson demonstrates the use of permits and the relevant settings.

Lesson Objectives

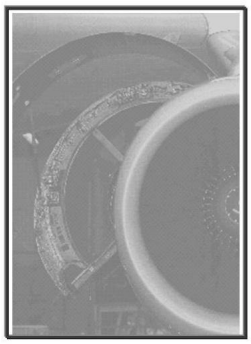
After completing this lesson, you will be able to:

- Use technical permits
- Use process-oriented permits
- Make all the necessary permit Customizing settings

Business Example

The project team is checking the use of maintenance order permits. The use of both technical and process-oriented permits are to be examined, which could influence the order release.

Permits



- **Technical Permits (unclassified)**
- **Process-oriented Permits (classified)**

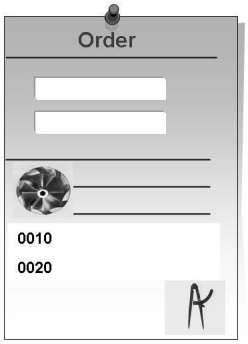


Figure 51: Permits

Permits are used to adhere to health and safety regulations, and control order processing.

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Permits can be used in plant maintenance in two ways:

- As technical permits assigned to technical objects
- As process-oriented permits with automatic assignment to the order

Technical permits are assigned manually to the technical object and not classified (for example, welding permit). If an order is created for the technical object, the permits are copied to the order and can influence the order release with a corresponding setting.

Process-oriented permits are determined automatically based on a field in the order header (for example, planned costs) and can likewise influence the order release. Automatic determination is based on the classification of the permit.

The deactivation of permits can be prevented.

You can select orders and technical objects according to assigned permits.

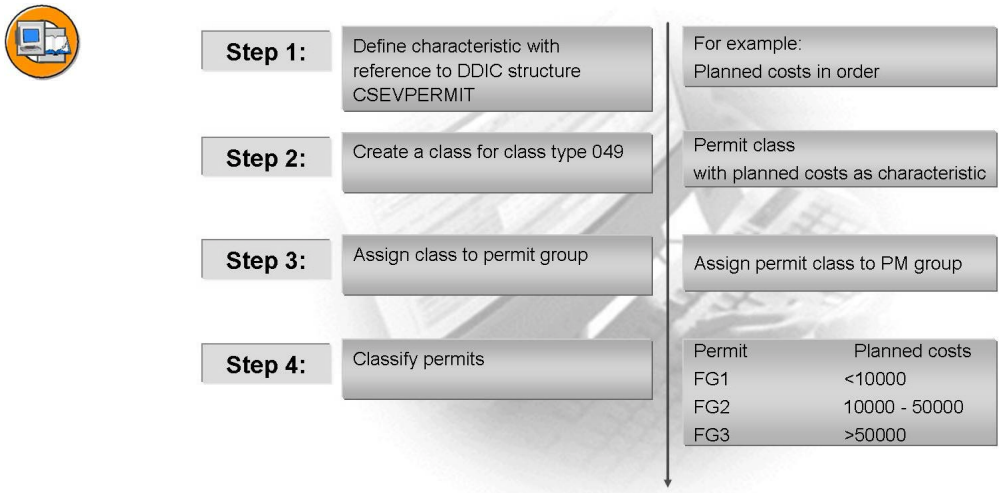

Figure 52: Process-Oriented Permits

When process-oriented permits are created, the following procedure applies:

First, characteristics are created in the classification system with reference to fields in the order header (table CSEVPERMIT).

Then a class of class type 049 (permits) is created. The characteristics are assigned to this group.

The permit class must be assigned to a permit group in Customizing. Only one permit group is currently available.

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A permit is created using the application function and supported with the required parameters (for example, must be issued, otherwise ERROR when released). The permit can then be classified. Depending on the type of characteristic, the values, for which this permit should be determined (for example, planned costs > $ 5,000), are set for each permit.

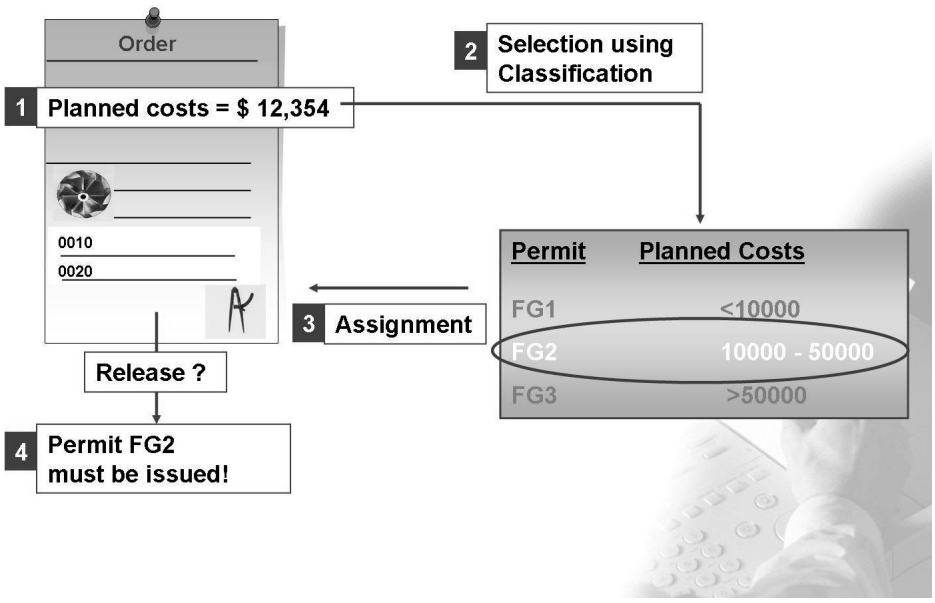

Figure 53: Permit Selection in Order

By scheduling materials and working times, the planned costs in the order are calculated.

Permit FG2 covers the interval from $ 10,000 - $ 50,000.

Through the value for planned costs determined at $ 12,354 in the order header, permit FG2 is assigned to the order automatically.

If the order is released, then the system checks whether all the permits in the order have been issued. If this is not the case, the release is refused. The order obtains the system status RELR (release rejected).

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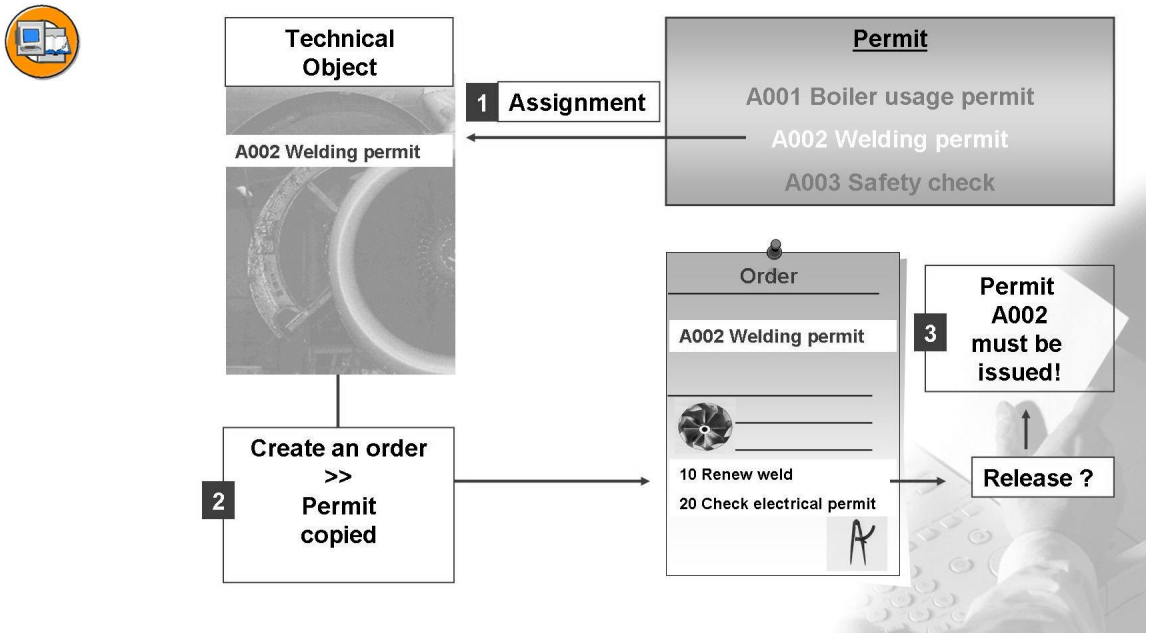

Figure 54: Technical Permits

Permits can also be used as technical permits without classification.

For this, a permit, which has previously been created in the application, is assigned to the master record for a technical object.

If an order is created for the object, the permit is copied from the object to the order header.

If the permit is set accordingly, it can prevent the order being released if it has not been issued by the employee responsible.

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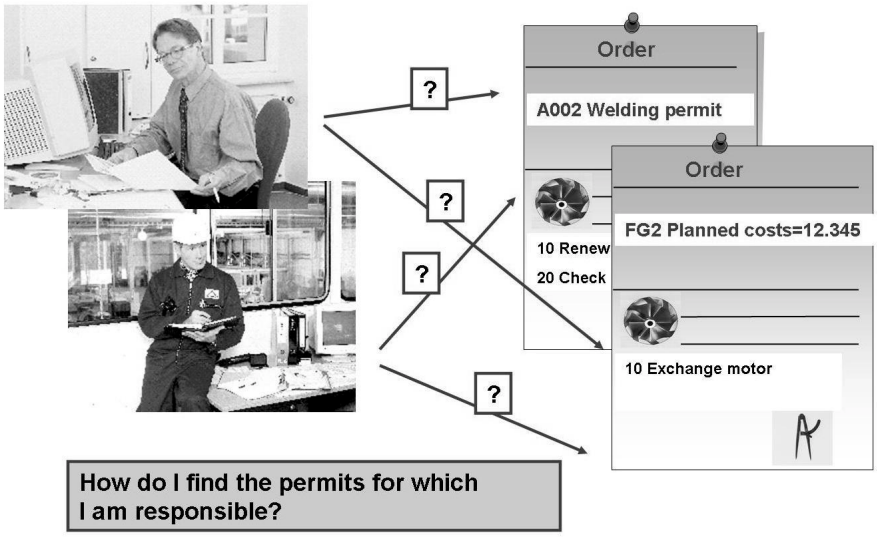

Figure 55: Permit List

The permit list enables the employee responsible to find permits quickly.

The list can be used in both display and change mode, that is, permits can be issued from this list. The issued permit can also be withdrawn again.

The selection criteria available are, for example, permit status (approved or not approved), permits which the employee carrying out the search is authorized to issue, order number, person who entered the permit, and so on.

The ranking list is displayed using the ABAP List Viewer and has a traffic light function to display whether permits have already been issued, still have to be issued, or are already overdue.

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Exercise 13: Permits

Exercise Objectives

After completing this exercise, you will be able to:

- Use technical permits
- Use process-oriented permits
- Make all the necessary permit Customizing settings

Business Example

The project team is checking the use of maintenance order permits. The use of both technical and process-oriented permits are to be examined, which could influence the order release.

Task 1:

1. Technical Permit

   Create a new permit **S##** with the following parameters.

Permit	S##
Text	Welding permit
Category	Work permits
Order release	2
Order completion	Leave blank
Permit class	Leave blank
Print	✓
Not modifiable	Leave blank
Usage block	Leave blank

   How do you do this?

2. Assign permit S## to your equipment TEQ-## and configure it so that the permit is proposed automatically when an order is created.

   How do you do this?

Continued on next page

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3. Create a maintenance order for your equipment TEQ-##: Provide a new weld for the casing.

   Enter a short description and standard time, and try to put the order in process directly.

   Which message appears?

   Which system status is set?

   Save the order. Which number is assigned to it?

4. Issue the welding permit S## for the above order.

Task 2:

Process-Oriented Permits

1. Create a maintenance order for biological cleaning in clarification plant K1. Extraordinary maintenance work is to be carried out on all pumps. The costs are estimated at around $10,000.

   Enter estimated costs of $10,000 in the order. How do you do this?

   _____

   _____

   _____

   Put the order in process.

   Which message appears? Check the log for the permit determination.

   Which permit has been determined in the order?

   Issue the permit. How do you do this?

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Solution 13: Permits

Task 1:

1. Technical Permit

   Create a new permit **S##** with the following parameters.

Permit	S##
Text	Welding permit
Category	Work permits
Order release	2
Order completion	Leave blank
Permit class	Leave blank
Print	✓
Not modifiable	Leave blank
Usage block	Leave blank

   How do you do this?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Environment → Permits***

      Select *New Entries*.

2. Assign permit S## to your equipment TEQ-## and configure it so that the permit is proposed automatically when an order is created.

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How do you do this?

a) ***SAP Menu → Logistics → Plant Maintenance → Management of Technical Objects → Equipment→ Change***

Enter equipment TEQ-##

Goto → Permits

Enter permit S## and activate automatic proposal:

Field Name or Data Type	Values
Permit column	**S##**
Proposal column	✓

3. Create a maintenance order for your equipment TEQ-##: Provide a new weld for the casing.

Enter a short description and standard time, and try to put the order in process directly.

Which message appears?

Which system status is set?

Save the order. Which number is assigned to it?

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create General***

When you attempt to release the order, the following dialog box appears:

Order release rejected owing to missing permit

Field Name or Data Type	Values
System status	**RELR**

Hint: You can use the RELR status as a selection option for your orders.

Continued on next page

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4. Issue the welding permit S## for the above order.

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

   Goto → Permits

   Select line and choose *Issue*

Task 2:

Process-Oriented Permits

1. Create a maintenance order for biological cleaning in clarification plant K1. Extraordinary maintenance work is to be carried out on all pumps. The costs are estimated at around $10,000.

   Enter estimated costs of $10,000 in the order. How do you do this?

   _____

   _____

   _____

   Put the order in process.

   Which message appears? Check the log for the permit determination.

   Which permit has been determined in the order?

Continued on next page

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Issue the permit. How do you do this?

a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create General***

Select the *Costs* tab in the order header.

Message: Order release rejected owing to missing permit

Field Name or Data Type	Values
System status	**RELR**

Log:

Goto → Logs → Permits

The permit **A008** was determined automatically.

Issue permit:

Goto → Permits

Select line and choose *Issue*

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Lesson Summary

You should now be able to:

- Use technical permits
- Use process-oriented permits
- Make all the necessary permit Customizing settings

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Lesson: Workflows

Lesson Overview

This lesson demonstrates how a workflow management system can be used to control and execute particularly structured processes in a targeted way. As well as introducing the workflow concept, this lesson illustrates the use of workflows with examples from plant maintenance.

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the fundamental terms in workflows
- Explain the concept of CATS
- Describe examples for using workflows in the maintenance environment

Business Example

In a company, those responsible for releasing maintenance contracts should be automatically informed. Using workflows ensures this process is carried out.

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Workflows

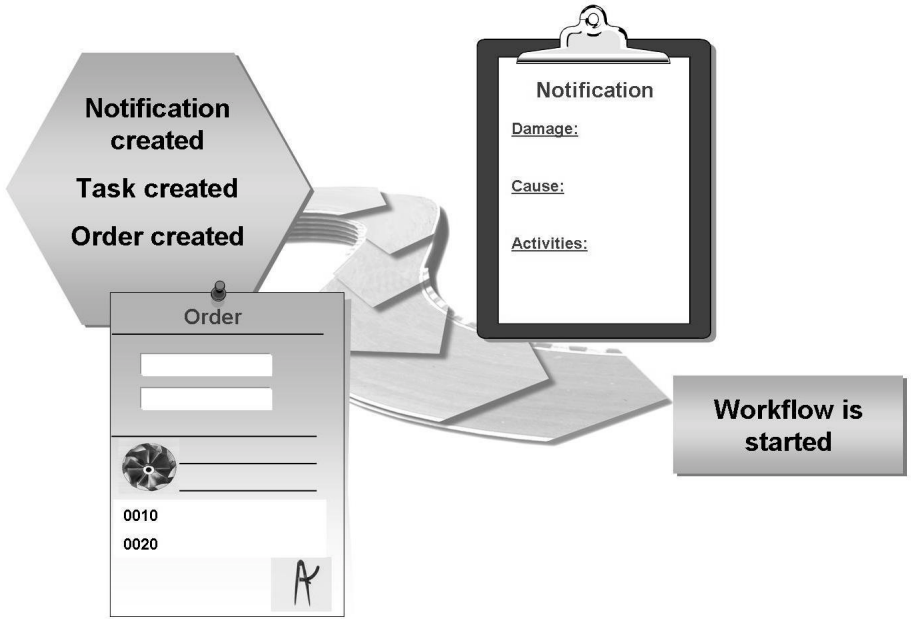

Figure 56: Workflows

You can use SAP Business Workflow to represent **business processes** in the SAP System and process them (repeatedly) using the workflow system. This means that a "Workflow Management System" can control and process particularly structured processes which:

- Comprise a series of **activities**
- Occur repeatedly in the **same or similar forms**
- Involve several **people** or **groups of people**
- Require a **high level of coordination**

The definition and execution of a workflow is divided into **four main areas**. A workflow is executed in the **Business Workplace**, where **work items** are displayed that the user can execute. This must be defined for a **workflow** to be executed. A workflow definition is created for this in the **Workflow Builder**. This contains **steps** that are executed for the validity period. The steps either control the workflow directly or they contain a reference to a **task**. The task refers to a **method** for an **object type** in the Business Object Repository (BOR) and can be executed for the validity period either automatically (background task) or by a user (online task).

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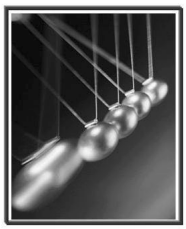

- Object type
- Task
  - Single-step task
  - Multi-step task
- Workflow template
- Work item
- Role
- Event

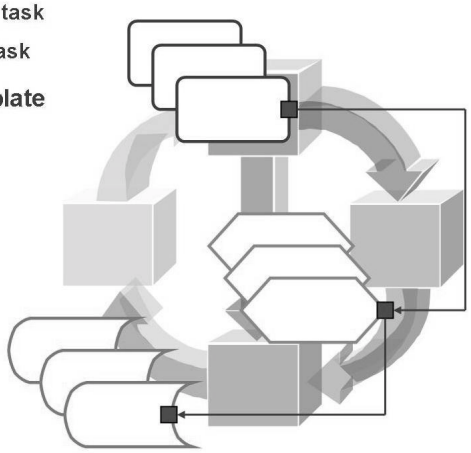

Figure 57: Workflow Terms

Object type = Description of data used in the system.

Task = Specific business activity description.

Single-step task (customer task/standard task) = activity that can be executed within a workflow definition or independently.

Multi-step task (workflow task/workflow template) = activity, whose description is referenced to a workflow definition.

Workflow template = standard, executable workflow for a defined object type.

Work item = object that represents a task or action in the workflow system for the validity period.

Role = object used to determine possible processors of a work item.

Event = occurrence of a status change for an object.

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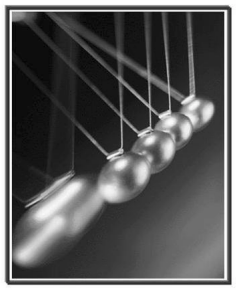
Notifications:

- Process notification
- Complete task
- Complete notification
- Put notification in process
- Process sample maintenance notification



Orders:

- PMO maintenance planner
- PM author
- PMO operation

Figure 58: Workflow Template in PM

For more details on workflow templates (object types, standard tasks, and so on), see the online documentation (*SAP Library → SAP ERP Central Component → Logistics → Plant Maintenance (PM) → Workflow Scenarios PM/CS*).

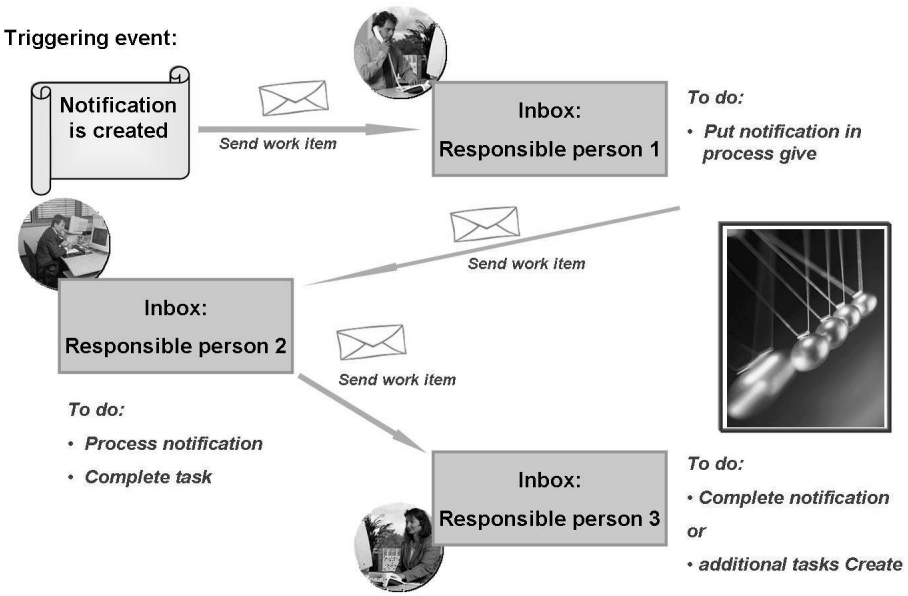


Figure 59: Workflow *Process New Maintenance Notification*

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In this scenario, the workflow helps you to process, monitor and complete newly created **maintenance notifications** efficiently. This process is illustrated in four steps that trigger and control the execution of the following standard tasks:

- Notification is created
- The person responsible is informed that that a new maintenance notification has been **created**. This must be **put in process** (**tasks** may have to be defined for the notification).
- Another responsible person is informed that a maintenance notification has to be processed.
- The person responsible is informed that the notification is completely processed and must either be finished or further tasks must be defined for the notification.

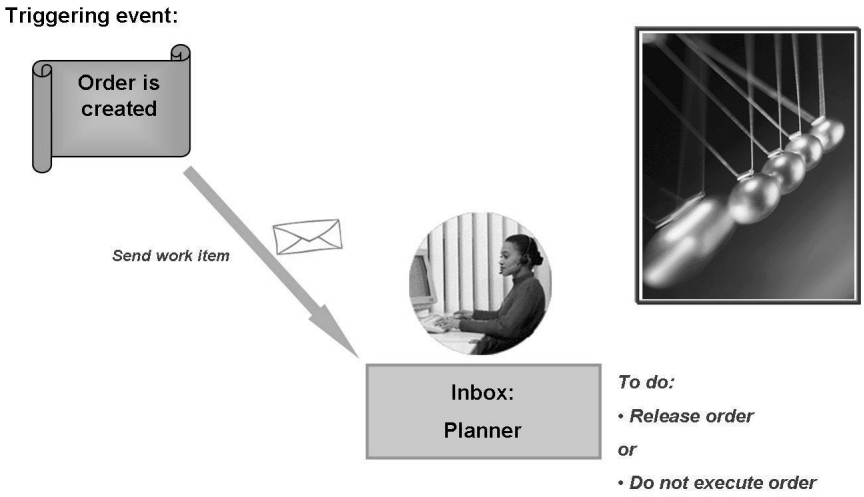

Figure 60: Single-Step Task *New Maintenance Order Created*

You use this workflow if you want the **planner** to be informed when the order is opened and must be released. Using the workflow, the planner sees a **work item** in their integrated inbox which can be processed directly from the inbox. When the work item is processed, the change transaction for the order is called up automatically.

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Exercise 14: Workflows

Exercise Objectives

After completing this exercise, you will be able to:

- Describe the fundamental terms in workflows
- Explain the concept of CATS
- Describe examples for using workflows in the maintenance environment

Business Example

In a company, those responsible for releasing maintenance contracts should be automatically informed. Using workflows ensures this process is carried out.

Task:

1. Which standard workflows are available in the area of maintenance processing?
2. Describe the work process flow for one of the standard workflows.

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Solution 14: Workflows

Task:

1. Which standard workflows are available in the area of maintenance processing?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Set Workflow for Orders

   Notification/task

Object	Description	Workflow template
Notification	PM: Process notification	WS00200065
Task	PM: Complete task	WS00200074
Notification	PM: Complete notification	WS00200075
Notification	PM: Put notification in process	WS00200095
Notification	Process sample maintenance notification	WS20000317

   Order

Object	Description	Workflow template
Order	PMO maintenance planner	WS 20000014
Order	PM author	WS 20000021
Order	PMO operation	WS 20000031

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2. Describe the work process flow for one of the standard workflows.

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Set Workflow for Orders

   - ***PM → PM-WOC → PM-WOC-MN***
   - *Activate event linkage*
   - For example WS 00200065 - PM: Process notification
   - Mark and select *i-Object*
   - Taste *Workflow Builder*

   Steps:

   - Activity 000015: Process PM notification (TS00008314 = single-step task)
   - Wait for event 000019: Notification completed
   - Wait for event 000025: Put notification in process
   - Wait for event 000031: All tasks completed

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Lesson Summary

You should now be able to:

- Describe the fundamental terms in workflows
- Explain the concept of CATS
- Describe examples for using workflows in the maintenance environment

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Lesson: Printing

Lesson Overview

This lesson demonstrates printing notification and shop papers. It also covers key print Customizing settings in the field of plant maintenance.

Lesson Objectives

After completing this lesson, you will be able to:

- Carry out and print the print control settings
- Carry out necessary Customizing settings for printing notifications or orders.

Business Example

The project team defines the print parameters for printing orders and notifications.

Printing

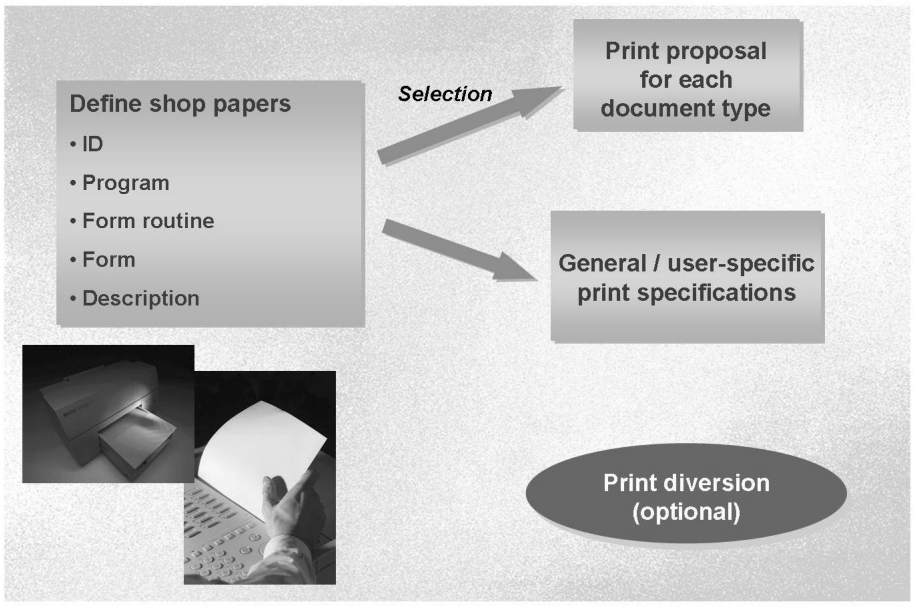

Figure 61: Print Control

The **shop papers** used are defined. For each shop paper, you can define additional control indicators, such as delta printing, updating the print status for each operation or component. You can also mark the shop paper as a time ticket or confirmation slip.

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For each **notification and order type**, you define which shop papers can be printed, and which are printed as a system default setting. Shop papers must be specified for an order, otherwise printing is not possible. The **selection field** informs the system that a shop paper for an order type is proposed for printing. If the field is not selected, the user must enter manually which paper should be printed.

The **print diversion** enables you to define that the print attributes of a particular shop paper are dependent on certain field contents in the order.

As soon as you have printed shop papers for a maintenance order, the system sets the appropriate **status** automatically and creates a **log**. You can use the log to determine which papers have already been printed, who initiated the print job, and when they were printed.

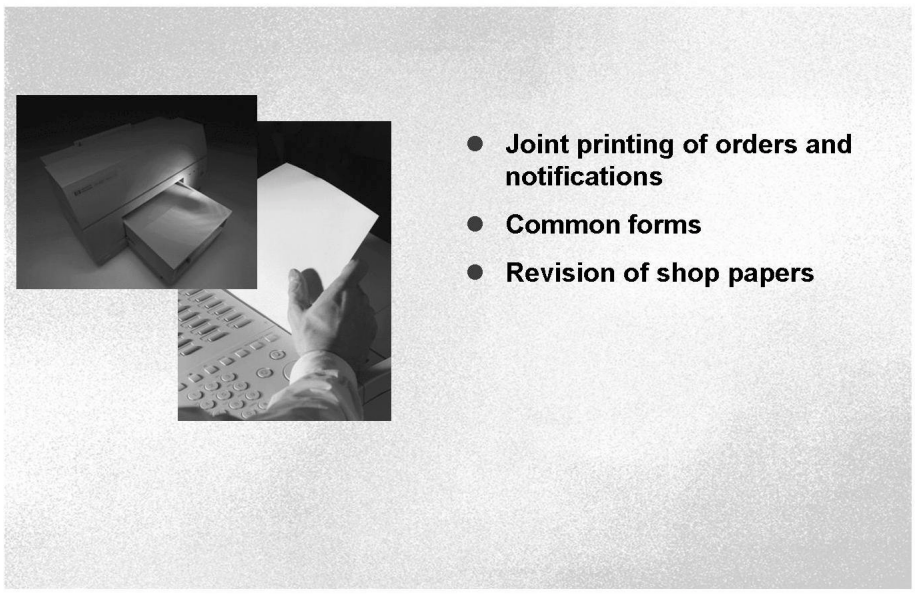

Figure 62: Printing Notifications and Orders

If an order and notification are assigned to one another, you can print all data and shop papers for both of them together, irrespective of whether you trigger printing from order or notification processing. The system displays all the order and notification papers for selection in the dialog box. You can also call up the standard print routines from all the print programs. All the data from all of the order and notification papers is available. This makes it possible to print out all order and notification data on one shop paper (for example, long text for the notification in the order paper).

The issue of data is controlled by the **output program (print output program)**. All print programs can be used both in the order and notification printout.

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The layout of the paper is defined by **forms** (there is a standard form available for all papers that can be modified as required).

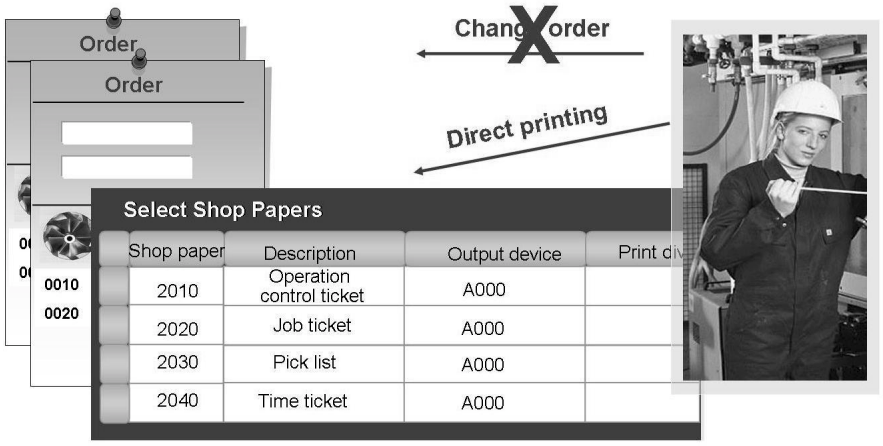

Figure 63: Dedicated Printing Transactions

Orders can be printed using a separate transaction (IW3D). This means that employees, who otherwise do not have any authorization to change the order, can also print the order.

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Exercise 15: Printing

Exercise Objectives

After completing this exercise, you will be able to:

- Carry out and print the print control settings
- Carry out necessary Customizing settings for printing notifications or orders

Business Example

The project team defines the print parameters for printing orders and notifications.

Task 1:

1. Define the order papers to be printed for your order type LO##. Which Customizing function do you choose?

   _____

   _____

   _____

   One paper should serve as instructions for the technician, another should notify warehouse management employees of the materials to be picked, and a third paper should remain with the maintenance supervisor in the workshop. Which papers have you selected?

Paper	Description
Paper 1:	
Paper 2:	
Paper 3:	

2. User-specific print defaults

   Set up user-specific print defaults based on the following specifications:

   – In planning plant 1000, for your planner group I##:

   – Print one copy of all papers on printer A000.

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– Print two copies of the paper for warehouse management (material staging) only on the printer in the warehouse.

– Do not print the papers immediately, but place them in a spool file first.

– No cover sheets should be printed.

Which Customizing function do you choose?

3. What settings do you make?

User		
Maintenance planning plant		
Maintenance planner group		
Paper		
Output device		
Number of copies		
New spool request		
Print immediately		
SAP cover page		

4. What does the Print diversion function mean?

Task 2:

Printing the order

Either set up a new order for order type LO##, or use an existing order for this order type.

1. How do you start printing the papers?
2. Which shop papers are proposed and which default values do you enter?

Paper	Output device	Copy	Delta	Imme-diately	Delete	New

3. Print the shop papers and then display the print log.

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Solution 15: Printing

Task 1:

1. Define the order papers to be printed for your order type LO##. Which Customizing function do you choose?

   _____

   _____

   _____

   One paper should serve as instructions for the technician, another should notify warehouse management employees of the materials to be picked, and a third paper should remain with the maintenance supervisor in the workshop. Which papers have you selected?

Paper	Description
Paper 1:	
Paper 2:	
Paper 3:	

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Print Control → Define Shop Papers, Forms and Output Programs

   In the dialog box, choose *Define Shop Papers for Order Type*.

   Select the following shop papers, click *Copy as ...* and assign your own order type as document type in the screen that appears.

Paper	Description
Paper 1:2010	Operation control ticket
Paper 2:2030	Job ticket
Paper 3:2040	Pick list

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2. User-specific print defaults

   Set up user-specific print defaults based on the following specifications:

   – In planning plant 1000, for your planner group I##:

   – Print one copy of all papers on printer A000.

   – Print two copies of the paper for warehouse management (material staging) only on the printer in the warehouse.

   – Do not print the papers immediately, but place them in a spool file first.

   – No cover sheets should be printed.

   Which Customizing function do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

      Select *SAP Reference IMG*.

      Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Print Control → Define Printer

      In the dialog box, choose *User Specific Print Control*.

3. What settings do you make?

User		
Maintenance planning plant		
Maintenance planner group		
Paper		
Output device		
Number of copies		

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New spool request		
Print immediately		
SAP cover page		

a) Settings:

Hint: Click *New Entries* and then *PM-specific Fields On/Off* on the next screen.

User	*	*
Maintenance planning plant	1000	1000
Maintenance planner group	I##	I##
Paper	*	2040
Output device	A000	P083
Number of copies	1	2
New spool request	Select	Select
Print immediately	Deselect	Deselect
SAP cover page	Deselect	Deselect

4. What does the Print diversion function mean?

a) If you select settings in particular fields (for example, planner group) and field contents (for example, I##), documents are not sent to the standard printer, but diverted to another printer (for example, the printer specified for the order type and planner group).

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Task 2:

Printing the order

Either set up a new order for order type LO##, or use an existing order for this order type.

1. How do you start printing the papers?

   a) ***SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change***

   Order → Print → Order

   Hint: The order must have the system status FREE.

2. Which shop papers are proposed and which default values do you enter?

Paper	Output device	Copy	Delta	Imme-diately	Delete	New

   a)

Paper	Output device	*Copy*	*Delta*	*Imme-diately*	*Delete*	*New*
2010	A000	`1`	`Dese-lect`	`Dese-lect`	`Dese-lect`	`Yes`
2030	A000	`1`	`Dese-lect`	`Dese-lect`	`Dese-lect`	`Se-lect`
2040	P083	`2`	`Dese-lect`	`Dese-lect`	`Dese-lect`	`Se-lect`

3. Print the shop papers and then display the print log.

   a) From the order header:

   Goto → Logs → Print

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Lesson Summary

You should now be able to:

- Carry out and print the print control settings
- Carry out necessary Customizing settings for printing notifications or orders.

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Lesson: Customizing: Checklist (Controlling)

Lesson Overview

This lesson gives you an overview of the key Customizing settings for the controlling phase of maintenance orders.

Lesson Objectives

After completing this lesson, you will be able to:

- List and use key Customizing settings in the controlling phase of maintenance orders

Business Example

Once the key settings for customizing orders in the control phase have been established, the project team would like to check that they are complete and correct.

Customizing Checklists

Material availability check

- Checking rule
- Scope of check
- Checking control

Scheduling

- Scheduling types
- Scheduling parameters

Permits

- Assignment of class to permit group

Workflows

- Activate event linkage
- Assign tasks to processor

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Printing

- Define shop papers
- Print proposals for shop papers
- User-specific print specifications
- Print diversion

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Lesson Summary

You should now be able to:

- List and use key Customizing settings in the controlling phase of maintenance orders

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Unit Summary

You should now be able to:

- Run a material availability check
- Set the parameters necessary for a material availability check
- Schedule maintenance orders
- Set the relevant scheduling parameters
- Use and schedule relationships in maintenance orders
- Use technical permits
- Use process-oriented permits
- Make all the necessary permit Customizing settings
- Describe the fundamental terms in workflows
- Explain the concept of CATS
- Describe examples for using workflows in the maintenance environment
- Carry out and print the print control settings
- Carry out necessary Customizing settings for printing notifications or orders.
- List and use key Customizing settings in the controlling phase of maintenance orders

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Unit 5

Completion

Unit Overview

This chapter links chapters on *Malfunction-based Maintenance* and *Planning Maintenance* from course PLM300. It reviews the terms and concept of completion of maintenance orders. Subsequently, the relevant Customizing settings and the use of a range of detailed functions will be shown.

Unit Objectives

After completing this unit, you will be able to:

- Carry out necessary Customizing settings for completion confirmation
- Adjust whole completion confirmation screen
- Create completion confirmations
- Explain the concept of CATS
- Describe the advantages and disadvantages of CATS and time confirmation of maintenance
- Explain the historical recording of orders
- Execute the material where-used-list
- List and use key Customizing settings in the completion phase of maintenance orders

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Lesson: Completion Confirmation

Lesson Overview

This lesson demonstrates the use of completion confirmation from maintenance orders and the relevant Customizing settings.

Lesson Objectives

After completing this lesson, you will be able to:

- Carry out necessary Customizing settings for completion confirmation
- Adjust whole completion confirmation screen
- Create completion confirmations

Business Example

During completion, times and technical findings are confirmed for the task performed. The order is then technically completed and settled for the maintenance order.

Completion Confirmation

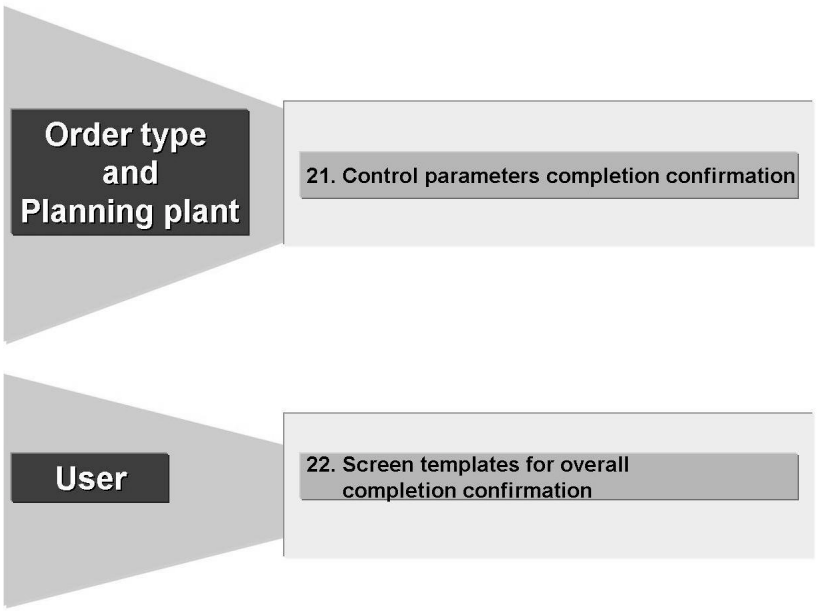

Figure 64: Setting Up an Order Type: (IV)

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Settings for completion confirmation

- **Control parameters**
  - Logs
  - Partial/final confirmation?
  - Write off reservations?
  - Type of date check
  - Default date and activities?
  - Goods movements: Only backflushing?
- **Causes of variance**
- **Screen templates (profile) for overall completion confirmation**
- **List editing**
- **Field selection**

A flexible screen layout is available for the **overall completion confirmation**.

Profiles are defined that contain the active screen areas and available pushbuttons.

The profile for the screen templates for the overall completion confirmation is created in Customizing. The assignment is made to the user, not the order type.

Each user can configure the required profile when executing the completion confirmation.

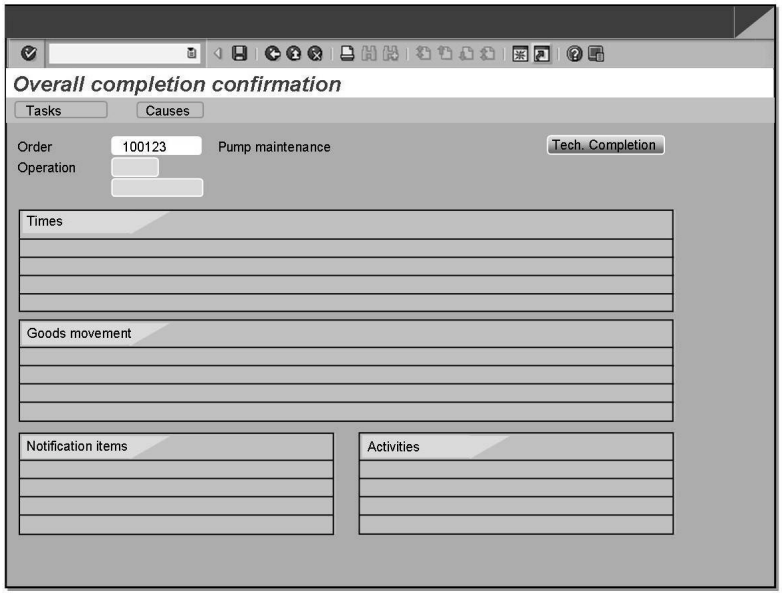

Figure 65: Settings for Overall Completion Confirmation

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Exercise 16: Completion Confirmation

Exercise Objectives

After completing this exercise, you will be able to:

- Carry out necessary Customizing settings for completion confirmation
- Adjust whole completion confirmation screen
- Create completion confirmations

Business Example

During completion, times and technical findings are confirmed for the task performed. The order is then technically completed and settled for the maintenance order.

Task 1:

Confirmation Parameters

The following defaults apply for your order type LO##: The system proposes final confirmation, including the posting of outstanding reservations. It also proposes dates and activities. Actual work may only exceed planned work by a maximum of 50%.

1. Which parameters do you set?

Final confirmation	
Post open reservs.	
Propose dates	
Propose activities	
Work deviation active	
Work deviation	
Duration deviation active	
Duration deviation	
Dates in the future	

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Task 2:

Performing a Completion Confirmation

1. Confirm operations for the last order you created. Access the operations from the collective entry for the operation list. Which selection criteria do you enter?

   _____

   _____

   _____

2. Which orders/operations are proposed by the system? Which confirmation number is assigned to them? Enter the actual work time for each operation and set the final completion confirmation indicator for each operation.

Confirmation number	Order	Operation	Actual work	Unit

   Check whether the data has been proposed correctly based on your confirmation parameters.

Task 3:

Adjust whole completion confirmation screen

1. Show the setting for the profile **PM01** of the whole completion confirmation. Which Customizing path do you choose?
2. Which general settings are set?

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Header data	
Screen area 1	
Screen area 1	

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Solution 16: Completion Confirmation

Task 1:

Confirmation Parameters

The following defaults apply for your order type LO##: The system proposes final confirmation, including the posting of outstanding reservations. It also proposes dates and activities. Actual work may only exceed planned work by a maximum of 50%.

1. Which parameters do you set?

Final confirmation	
Post open reservs.	
Propose dates	
Propose activities	
Work deviation active	
Work deviation	

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Duration deviation active	
Duration deviation	
Dates in the future	

a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

Select *SAP Reference IMG*.

Plant Maintenance and Customer Service →Maintenance and Service Processing → Completion Confirmations → Define Control Parameters for Completion Confirmations

Final confirmation	**Select**
Post open reservs.	**Select**
Propose dates	**Select**
Propose activities	**Select**
Work deviation active	**Select**
Work deviation	**50**
Duration deviation active	**Deselect**
Duration deviation	
Dates in the future	**Deselect**

Task 2:

Performing a Completion Confirmation

1. Confirm operations for the last order you created. Access the operations from the collective entry for the operation list. Which selection criteria do you enter?

_____

_____

_____

a) ***SAP Menu → Logistics → Maintenance → Maintenance Processing → Completion Confirmation → Entry→Time Sheet → CATS classic →Record Times***

For example, restriction using the order number or work center T-EW##.

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2. Which orders/operations are proposed by the system? Which confirmation number is assigned to them? Enter the actual work time for each operation and set the final completion confirmation indicator for each operation.

Confirmation number	**Order**	**Opera-tion**	**Actual work**	**Unit**

Check whether the data has been proposed correctly based on your confirmation parameters.

a)

Confirmation number	Order	Operation	Actual work	Unit
38062	800228	0010	3	H
38062	800228	0020	5	H
38062	800228	0030	2	H
38062	800228	0040	1	H

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Task 3:

Adjust whole completion confirmation screen

1. Show the setting for the profile **PM01** of the whole completion confirmation. Which Customizing path do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Plant Maintenance and Customer Service →Maintenance and Service Processing → Completion Confirmations → Set Screen Templates for Completion Confirmations

   Double click on the profile PM01

2. Which general settings are set?

Header data	
Screen area 1	
Screen area 1	

   a) Profile changeable, with totals line, release in future and release upon saving, (permit required is not set)

Header data	`1 maintenance with order number`
Screen area 1	`1 times for operation`
Screen area 1	`3 goods movements`

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Lesson Summary

You should now be able to:

- Carry out necessary Customizing settings for completion confirmation
- Adjust whole completion confirmation screen
- Create completion confirmations

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Lesson: CATS

Lesson Overview

This lesson presents the cross-application time sheet, CATS.

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the concept of CATS
- Describe the advantages and disadvantages of CATS and time confirmation of maintenance

Business Example

The project team evaluates whether the cross-application time sheet, CATS, should be carried out as an alternative to time confirmation within maintenance.

CATS

Figure 66: CATS - Cross-Application Time Sheet

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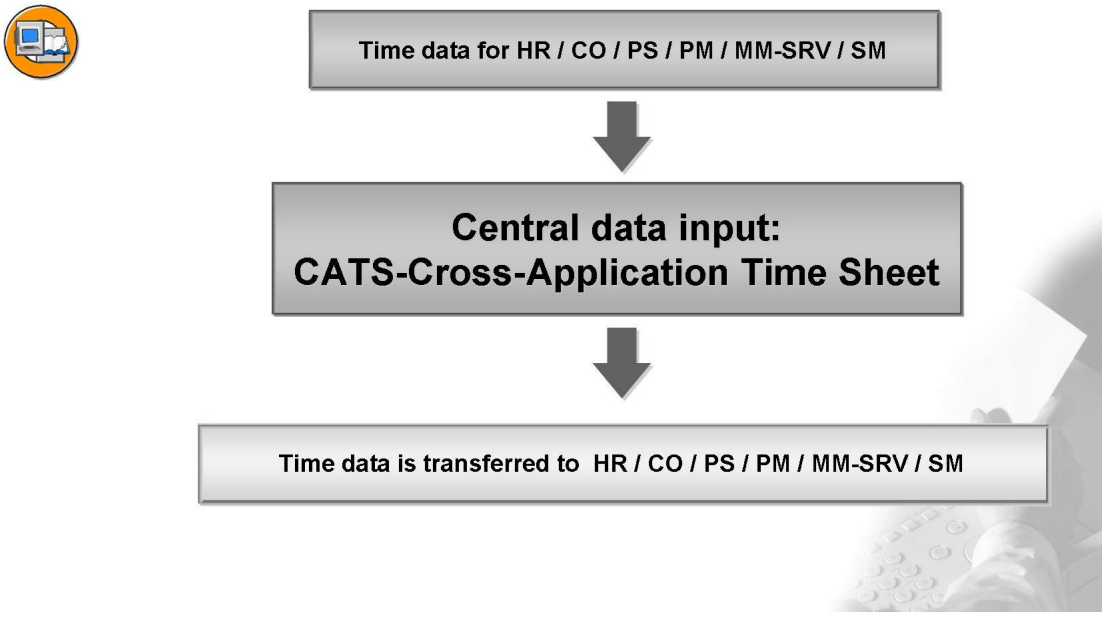

Figure 67: What is CATS?

CATS is a cross-application transaction that enables users to record the actual times of individual employees using a time sheet.

The CATS functionality enables time data to be recorded in the time sheet for the following applications:

- Controlling: Internal activity allocation
- Personnel administration: Attendances, absences
- Service processing: Service entries
- Maintenance, customer service, project system: Completion confirmations

CATS presents several advantages:

- Standard cross-application screens for entering the actual times
- Simple operation for all users
- Default field values and data entry templates (profiles)
- Integrated approval procedures
- Support of corrections
- User exits for more flexibility regarding authorization checks, validations and default values

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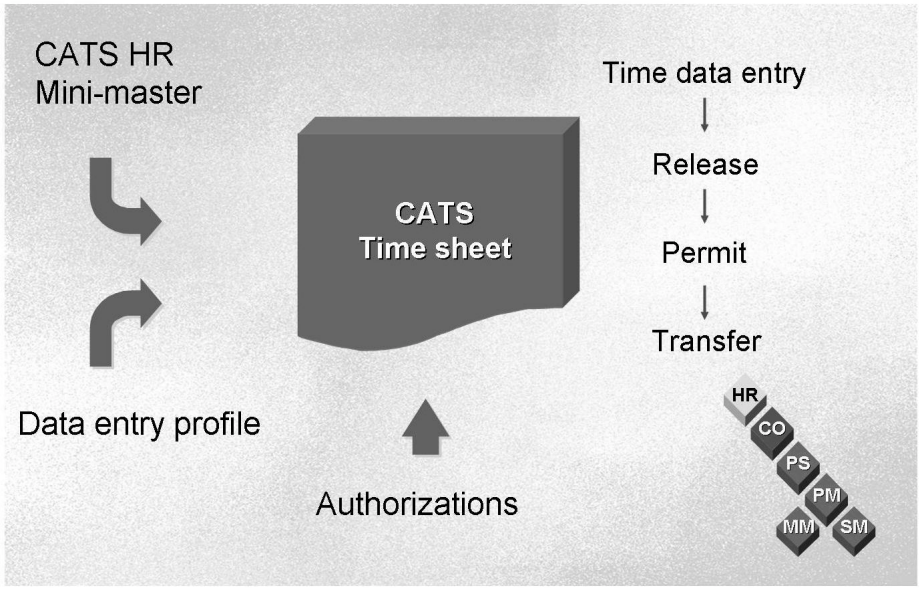

Figure 68: Prerequisites and Process

Prerequisites for running CATS are an HR mini-master, a data entry profile and the appropriate authorizations to work with the time entry sheet.

The CATS process comprises the following steps:

- Entry of time data in the time sheet
- Release of time data (optional, depending on the process)
- Approval of time data (optional, depending on the process)
- Transfer of CATS data to the target applications

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Exercise 17: CATS

Exercise Objectives

After completing this exercise, you will be able to:

- Explain the concept of CATS
- Describe the advantages and disadvantages of CATS and time confirmation of maintenance

Business Example

The project team evaluates whether the cross-application time sheet, CATS, should be carried out as an alternative to time confirmation of the maintenance.

Task 1:

Entry Profiles

1. Display the entry profile **PM2**. Which Customizing path do you choose?
2. Which general settings are set?
3. What period type is used for time entry?
4. What should the default values be?

Task 2:

Describe the process flow for time confirmation using the timesheet.

1. Which steps must you carry out?

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Solution 17: CATS

Task 1:

Entry Profiles

1. Display the entry profile **PM2**. Which Customizing path do you choose?

   a) ***SAP Menu→ Tools → Customizing → IMG → Execute Project***

   Select *SAP Reference IMG*.

   Cross-Application Components → Time Sheet → Special Settings for CATS regular → CATS regular → Set Up Data Entry Profiles

   Double click on *PM2* (PM: maintenance with planning indicators)

2. Which general settings are set?

   a)

   - Profile changeable
   - With planned hours
   - With totals line
   - Hours with additional brightness
   - Display weekdays
   - Release in future
   - Release when saved

3. What period type is used for time entry?

   a) Weekly, with Monday as the first day and two weeks as the preview

4. What should the default values be?

   a)

Controlling area	Select
Cost center	Select
Activity type	Select
Attendance/absence type	0800

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Task 2:

Describe the process flow for time confirmation using the timesheet.

1. Which steps must you carry out?

   a) Steps:

      1. Configure entry profile in customizing.
      2. Check for which personnel numbers a completion confirmation is created.
      3. Enter times:

         SAP Menu → Logistics → Maintenance → Maintenance Processing → Completion Confirmation → Entry→Time Sheet → CATS classic →Record Times

      4. Transfer times:

         SAP Menu → Logistics → Maintenance → Maintenance Processing → Completion Confirmation → Entry→Time Sheet → Transfer →Maintenance and Service Processing Times→ Transfer

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Lesson Summary

You should now be able to:

- Explain the concept of CATS
- Describe the advantages and disadvantages of CATS and time confirmation of maintenance

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Lesson: History

Lesson Overview

This lesson explains how orders can be historically recorded and shows how these can be used for evaluation purposes. In addition, the lesson demonstrates how the planned and the actual use of each material and order can be compared with the help of the material where-used-list.

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the historical recording of orders
- Execute the material where-used-list

Business Example

The project team has decided that an order history should be made available for evaluation purposes. Additionally, it should be possible to compare the planned and the actual use of each material and order, using the material where-used-list.

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History

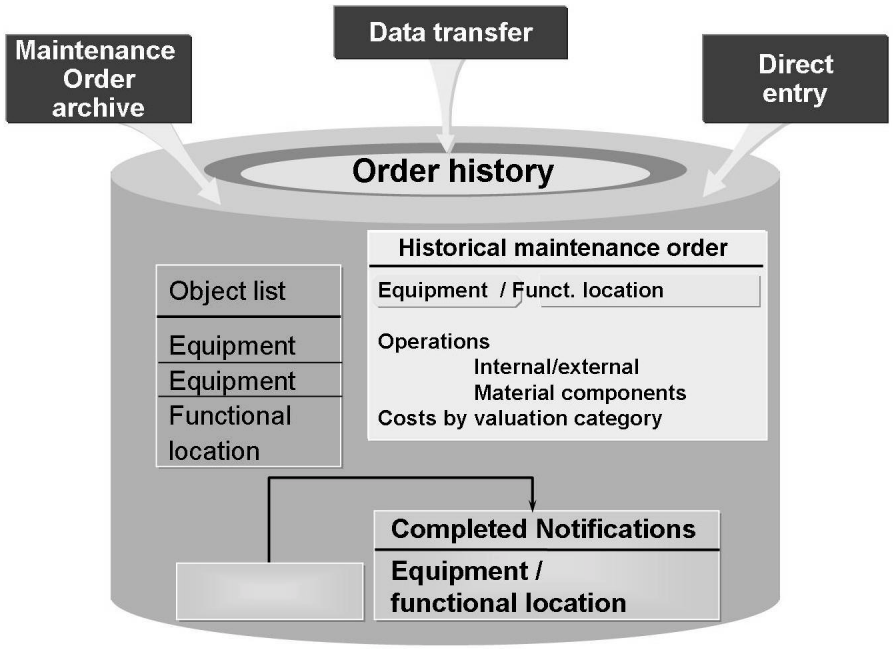

Figure 69: Historical Maintenance Orders

The objective of archiving orders is to remove order data collected over a long period of time from the database and store it in compressed form in a special database area (order history) for evaluation purposes.

There are two options available for archiving orders:

- Manually enter historical orders
- Reorganize orders (=archive and delete - SARA transaction)

During reorganization, orders are transferred to the order history in compressed form. The following data is stored:

- Order header data
- Object list
- Determining Location and Account Assignment Data
- Operations and sub-operations
- Planned and unplanned material components, summarized by material numbers
- Costs, summarized by value categories

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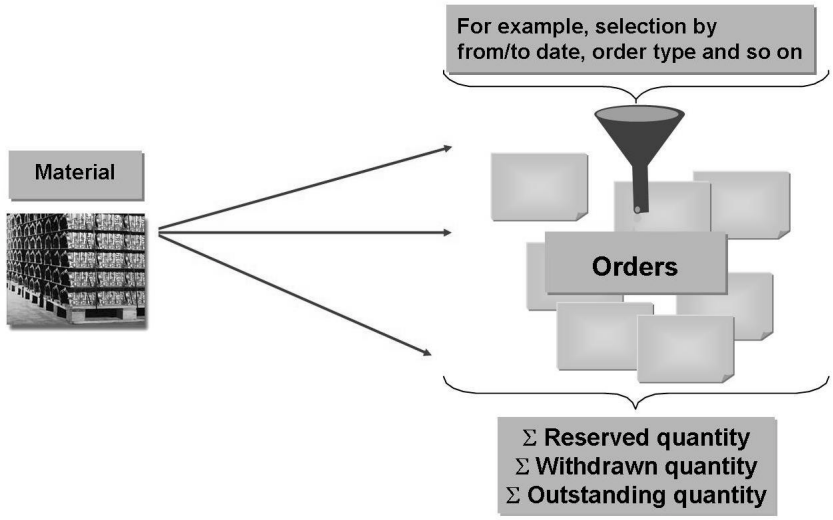

Figure 70: Material Where-Used List

The material where-used list compares the planned and actual consumption for each material and order.

The system derives the planning data from the material components in the order, and calculates the actual data from the actual reservation quantities or goods movements for the order.

Hint: To display material withdrawals, you must have activated the goods movements function for the order in Customizing.

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Lesson Summary

You should now be able to:

- Explain the historical recording of orders
- Execute the material where-used-list

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Lesson: Customizing Confirmations: Checklist (Completion)

Lesson Overview

This lesson gives you an overview of the key Customizing settings for the completion phase of maintenance orders.

Lesson Objectives

After completing this lesson, you will be able to:

- List and use key Customizing settings in the completion phase of maintenance orders

Business Example

Once the key settings for customizing orders in the completion phase have been established, the project team would like to check that they are complete and correct.

Customizing Checklists

Completion Confirmation

- Control parameters
- Causes of variance
- Screen templates for overall completion confirmation
- List editing
- Field selection

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Lesson Summary

You should now be able to:

- List and use key Customizing settings in the completion phase of maintenance orders

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Unit Summary

You should now be able to:

- Carry out necessary Customizing settings for completion confirmation
- Adjust whole completion confirmation screen
- Create completion confirmations
- Explain the concept of CATS
- Describe the advantages and disadvantages of CATS and time confirmation of maintenance
- Explain the historical recording of orders
- Execute the material where-used-list
- List and use key Customizing settings in the completion phase of maintenance orders

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Course Summary

You should now be able to:

- Set up and use Internet or Intranet supported access to maintenance functions (portal)
- Set up and use notification (notification type, catalog, catalog profiles)
- Set up and use planning (order type, work center, capacity planning)
- Set up and use controlling (material availability check, scheduling, permits, workflows, printing)
- Set up and use completion (completion confirmation, history, CATS)

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Appendix 1

Customizing Paths

To access Customizing go to:

SAP Menu → Tools → Customizing → IMG → Execute Project

(or use the transaction SPRO)

Select *SAP Reference IMG*.

Notification

Field Name or Data Type	Path
Overview of notification type	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications→ Overview of Notification Type*
Action box	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Additional Functions → Define Action Box*
General notification	*Overall Application Components → Notification*
System condition	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Condition Indicator → Define System Conditions*

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Field Name or Data Type	Path
Catalog profile	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Content → Maintain Catalogs*
Screen templates	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Set Screen Templates for Notification Type*
Print notifications	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Notification Print Control*
Allowed change of notification type	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Allowed Change of Notification Type*
Field selection	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Set Field Selection for Notifications*
Integration notification/order (long text transfer, object list control)	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Notification and Order Integration*
Catalogs	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Content → Maintain Catalogs*

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Field Name or Data Type	Path
Long text control	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Long Text Control for Notification Types*
List editing	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → List Editing*
Notification type	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Notification Types*
Assign notification types to order types	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Assign Notification Types to Order Types*
Number ranges	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Type → Define Number Ranges*
Object Information	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Object Information*
Partner determination procedure	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Partners*
Priorities	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Response Time Monitoring → Define Priorities*

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Field Name or Data Type	Path
Response profile	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Response Time Monitoring → Define Response Monitoring*
Transaction start values	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Creation → Notification Types → Define Transaction Start Values*
Workflow for notifications	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Notifications → Notification Processing → Set Workflow for Maintenance Notifications*

Planning

Field Name or Data Type	Path
Refurbishment order	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Indicate Order Types for Refurbishment Processing*
Order combined with notification	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Notification and Order Integration*
Order type	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Configure Order Types*
Business Add-Ins	*Plant Maintenance and Customer Service → System Enhancements and Data Transfer → Business Add-Ins*

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Field Name or Data Type	Path
Customer Exits	*Plant Maintenance and Customer Service → System Enhancements and Data Transfer → Develop Enhancements*
External profiles	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Create Default Value Profiles for External Procurement*
Maintenance activity type	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Maintenance Activity Type → Define Maintenance Activity Types....etc.*
Maintenance planning plant	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Assign Order Types to Maintenance Plants*
Integration notification/order (long text transfer, object list control)	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Notification and Order Integration*
Number range	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Configure Number Ranges*
Object Information	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Object Information*
OCI interface	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Interface for Procurement Using Catalogs (OCI)*

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Field Name or Data Type	Path
Partner determination procedure	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Partner → Define Partner Determination Procedure and Partner Function*
Planning indicator	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Define Default Value for Planning Indicator for Each Order Type*
Priorities	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → General Data → Define Priorities*
Control key	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Control Key → Maintain Control Keys. ..etc.*

Scheduling

Field Name or Data Type	Path
Print orders	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Print Control*
Permits	*Plant Maintenance and Customer Service → Master Data in Plant Maintenance and Customer Service → Basic Settings → Permits → Define Permit Categories ...etc.*
Solution database	*Customer Service → Solution Database*

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Field Name or Data Type	Path
Material availability check	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Availability Check for Materials, PRTs and Capacities*
Scheduling	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders →Scheduling*
Workflow for orders	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Maintenance and Service Orders → Functions and Settings for Order Types → Set Workflow for Orders*

Completion

Field Name or Data Type	Path
Control parameters for completion confirmation	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Completion Confirmations → Define Control Parameters for Completion Confirmations*
Screen templates for overall completion confirmation	*Plant Maintenance and Customer Service → Maintenance and Service Processing → Completion Confirmations → Set Screen Templates for Completion Confirmation*

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Feedback

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